INDIVIDUAL DIFFERENCES IN RELIGIOSITY AND RELATED CONSTRUCTS AFTER EXPOSURE TO MYSTICAL-TYPE EXPERIENCES

By

STERLING STOKES

A Thesis Submitted to The Honors College

In Partial Fulfillment of the Bachelor's degree
With Honors in

Psychology

THE UNIVERSITY OF ARIZONA

M A Y 2 0 2 1

Approved by:

Jeff Greenberg, Ph.D.
Department of Psychology

Table of Contents

I. Abstract

The purpose of this correlational study was to find any relationship(s) between having a mystical-type experience (MTE) and its ties to intrinsic religiosity, extrinsic religiosity, religion as quest, the quiet ego, compassion, hostility, narcissism, and death anxiety within college students at an American university in the Southwest. The current data demonstrates that MTEs trend towards a positive correlation for intrinsic religiosity. There are no statistically significant findings for extrinsic religiosity, religion as quest, the quiet ego, narcissism, compassion, hostility, and death anxiety, meaning that the current data does not yield any relationship between MTEs and these other variables. Due to a limited sample size, any potential trends cannot be stated with confidence. To conclude these findings, the limitations present within this study are detailed and the next steps for future research are discussed.

Keywords: mystical experience, intrinsic religiosity, extrinsic religiosity, religion as quest, the quiet ego, compassion, hostility, narcissism, death anxiety

II. Introduction

In the past, defining a mystical experience has been a topic of contention amongst the religious and psychological perspectives, as its characteristics are vast and difficult to quantify. Currently, it has been widely accepted that a mystical-type experience (MTE) can "designate a coherent category of experience," where "the experiential sense of a separate subject and object is not present," meaning that one feels great connectedness with their environment and place within it (Brainard, 1996). In additional studies apart from those assessing the impact of MTEs, mortality salience has been demonstrated to increase death anxiety, which can manifest itself in individuals clinging more strongly to their worldviews to bolster their self-esteem (Routledge & Vess, 2019). This is the crux of Terror Management Theory (TMT). Currently, only a few studies have explored the relationships between MTEs and death anxiety. This study intends to focus on the correlations between MTEs and religious orientation, the quiet ego, compassion, and narcissism. We begin with an explanation of MTEs.

a. Defining a Mystical Experience

Throughout history, scholars have struggled to clearly objectify and define both mystical and MTE, although some believe the experience can heavily change one's perception in a positive way, lessening anxieties and instilling an overwhelming sense of awe with existence. MTEs have been demonstrated to contain the following characteristics: "1) *sacredness*: a sense that what is encountered is holy or sacred; 2) *noetic quality*: the experience is imbued with an aspect of meaning and a sense of encountering ultimate reality that is more real than usual everyday reality; 3) *deeply felt positive mood*: joy, ecstasy, blessedness, peace, tenderness, gentleness, tranquility, awe; 4) *ineffability*: the experience is difficult to put into words; 5) *paradoxicality*: to explain the experience, one seems to have to describe the co-existence of mutually exclusive states or concepts; 6) *transcendence of time and space*: Introvertive mystical experiences may have a non-spatial and non-temporal aspect, such that the traditional notions of time and space have no meaning" (Barrett and Griffiths, 2018). Subscribing to spiritual or religious beliefs have been linked to higher life satisfaction and wellbeing. Given that MTEs have been coined as the "root and center of religion" (Hood & Francis, 2013), they may play a

large role in the value religion and spirituality hold for people. MTEs can be initiated through various means, some of which include: hobbies, meditation, expression, near-death or out-of-body experiences, or through the use of certain substances.

Mysticism has been shown to increase life satisfaction, and it has been found that individuals who have had MTEs often have higher levels of subjective well-being (Byrd et al., 2000). More specifically, certain studies have found that "religious salience (Peterson & Roy, 1985), divine relations (Chumbler, 1996; Ellison, 1991; Pollner, 1989), religious certainty (Chumbler, 1996; Ellison 1991), and feeling close to God during prayer (Poloma & Pendleton, 1989)" are tied to one's subjective well-being and life satisfaction (Byrd et al., 2000). Additionally, once individuals have a MTE, they often find more meaning to their lives and a deepened sense of spirituality (Griffiths et al., 2008). Spirituality and religion often hold an important role in one's identity and how they view the world around them.

b. Terror Management Theory and Death Anxiety

Further implications of these relationships can be explained through TMT, where individuals have psychological mechanisms to protect against anxieties that arise when we are reminded of their own death (Greenberg et. al., 1986). Internal defense mechanisms, such as cultural worldviews, self-esteem, and close relationships serve as buffers against death anxiety, and can lessen one's overall uneasiness with their own death. Defense mechanisms such as these allow for individuals to experience death transcendence by believing a part of their existence will survive their physical death.

There are two types of death transcendence. One example is literal immortality beliefs – believing in some form of an afterlife (i.e. heaven/hell, reincarnation, etc.) that a part of their existence will continue even after one's physical passing. Another type of transcendence, symbolic immortality beliefs, is a type where individuals find reassurance in the sense that the works they have created while on earth will endure their physical death and have an impact on the lives of others. This might be through their offspring or lasting artistic or scientific achievements. Reminding individuals of their own death (mortality salience/MS) can cause individuals to cling strongly to their cultural worldviews.

This is the meaning behind the MS hypothesis, which states that "briefly reminding individuals of their mortality causes them to exhibit higher levels of worldview defense and to pursue activities that have the potential to increase their self-esteem" (Routledge & Vess, 2019).

To defend against this type of anxiety, individuals express favoritism towards members of their in-group and people who hold the same opinions and beliefs as their own (Bushman et al., 2008). Due to the fact that individuals favor their ingroups, individuals can derogate outgroup members. This can lead individuals to demonstrate prejudice or hostility towards other groups that question their personal worldviews and/or beliefs (Greenberg et al., 1990). The role of MTEs becomes increasingly relevant when considering them in the context of TMT.

Death anxiety can be expressed as a component of TMT and the MS hypothesis, where individuals experience heightened anxiety when being reminded of their own mortality. There have been multiple studies that have produced circumstances where death anxiety can be lessened. Methods to reduce death anxiety have been studied in clinical settings. Although not a comprehensive list, it has been found that death anxiety can be decreased through death education programs, gratitude, and anxiety-reducing placebos (Johansson & Lally, 1990; Lau & Cheng, 2011; Greenberg et al., 2003). Having a MTE has the potential to change the way one relates to their own mortality (Moreton et al., 2019). MTEs might serve as another variable that can lessen death anxiety, because they may reinforce religious and spiritual beliefs and a sense of connection to things more lasting than the self, or they may otherwise convince individuals there is more to life than mere material existence.

There is a gap in research regarding MTEs and their influence on death anxiety, religious orientation, compassion, hostility, narcissism, and the quiet ego. This study sets out to answer the following question: Do people who have had MTE/s report different attitudes towards death, religious orientation, quiet ego, compassion, hostility, or narcissism?

c. Religious Orientation and Death Anxiety

There are three religious orientations: extrinsic, intrinsic, and religion as quest (Batson et al., 1991). To understand the differences between these types of religiosity, “intrinsic religiosity is a dimension of religious involvement in which religion serves as its end or goal, while extrinsic religiosity is a form of involvement in which religion is a means to some other end or goal, i.e. an instrumental value” (Gorsuch, 1998). On the other hand, religion as quest is described as “the degree to which an individual’s religion involves an open-ended, responsive dialogue with existential questions raised by the contradictions and tragedies of life” (Burris et al., 1996). Individuals who score higher on religion as quest scales often demonstrate tendencies that align with one’s ability to “openly face complex, existential questions (questions of life’s

meaning, of death, and of relations with others)" (Batson & Schoenrade, 1991). These individuals are more willing to alter their religious frameworks.

Additionally, individuals who score higher on intrinsic religiosity scales find their own religious framework to be that which guides their life, where subscribing to a religion is an end in itself. On the other hand, those who score higher on extrinsic religiosity scales tend to cling to their religion for more selfish motivations (Kirkpatrick & Hood, 1990). It has also been found that individuals who score higher on intrinsic religiosity scales demonstrate lower death anxiety (Thorson & Powell, 1990). The relationships between MTEs and religious orientation will be further explored, as well as MTEs and the quiet ego.

d. The Quiet Ego

The quiet ego can be defined as "a self-identity that transcends egoism and identifies with a less defensive, balanced stance toward the self and others" (Wayment et al., 2014). Furthermore, the quiet ego can have expansive personal and societal benefits, as "the quieter ego has more balance and integration of the self and others in one's concept of the self, a balanced recognition of one's strengths and weaknesses that paves the way for personal growth, and a greater compassion for the self and others" (Bauer & Wayment, 2008). MTEs increase the tendency for one to feel greater connectedness with their place in the world (Brainard, 1996). Similarly, the quiet ego focuses on feelings of connectedness with oneself and others. When individuals feel more deeply connected with others, they also demonstrate higher life satisfaction, as feeling connected to others can heighten one's overall quality of life (Register & Herman, 2010). We hypothesize that as compared to those who have not had a MTE, those who have had a MTE will demonstrate higher scores on a measure of the quiet ego.

e. Compassion

When individuals have fulfilling social interactions, they feel more connected to the people around them and with their place in society (Caneyello & Crocker, 2017). Compassion in this sense is understood as the willingness to help others in need. It is relevant to highlight the current literature regarding religious orientation and compassion, as they appear to relate. Previous studies have analyzed intrinsic religiosity and its relationships to compassion, and most findings demonstrate that those who are intrinsically religious demonstrate higher levels of compassion, although only to certain groups (Batson et al., 1999). This highlights the fact that one's religious orientation might be connected to helping others. Apart from religious

orientation, however, having a MTE has not been studied in its correlation with compassion. Those who have had MTEs frequently report feeling more connected with others, potentially creating a measurable correlation between having a MTE and being more willing to help others. We hypothesize that the mystical group – as compared to the non-mystical group – will demonstrate higher levels of compassion.

f. The Quiet Ego, Hostility, and Death Anxiety

It has been shown that individuals who are reminded of their own death often demonstrate higher levels of hostility towards individuals who question their worldviews, as a way to buffer against their personal anxieties (Greenberg et al., 1990; Pyszczynski et al., 2008). It follows that high levels of death anxiety are correlated with higher levels of outward hostility. Quite different from MS, MTEs have the capability to lessen one's overall anxiety (Griffiths et al., 2006). MTEs could reduce death anxiety, and with lower anxieties, individuals likely would feel less of a necessity to buffer against opinions that challenge their own.

It has also been found that the quiet ego can lessen death anxiety, specifically through the context of humility and self-transcendence (Kesebir, 2014). Individuals who have a quiet ego are less likely to demonstrate the same buffers that individuals with a noisy ego and high death anxiety have. In this study, considering that MTEs have the ability to lessen anxieties, we hypothesize that those who have had a MTE, as compared to those who have not, will demonstrate lower levels of hostility.

g. Narcissism

Narcissism is generally understood to contain four factors, "exploitativeness/entitlement, leadership/authority, superiority/arrogance, and self-absorption/self-admiration," all of which can be measured through the Narcissistic Personality Inventory (NPI) (Emmons, 2010). The scale within this study centers on these four factors. If MTEs are correlated with compassion, low hostility, and a quiet ego, they should be negatively correlated with measures of narcissism.

As it can be seen, there are many potential hypotheses regarding connections among MTEs and other psychologically relevant variables. This study is intended to assess some of these hypotheses.

h. Present Study

The goal of this correlational study is to determine any possible correlations between having a MTE and the six variables discussed (death anxiety, religious orientation, the quiet ego,

compassion, hostility, and narcissism), as compared to individuals who do not report having a MTE. We hypothesize that individuals who report having a mystical experience will demonstrate higher averages for the religion as quest scale and the intrinsic religiosity scale, with lower averages for extrinsic religiosity as compared to those who have not had a MTE. Furthermore, we hypothesize that as compared to those who have not had a MTE, the MTE group will demonstrate higher scores on the quiet ego construct and higher levels of compassion. We hypothesize that those who have had a MTE will demonstrate lower levels of hostility, narcissism, and death anxiety as compared to those who have not had a MTE. By using surveys and questionnaires that have been verified and found in other research studies, a correlational study design will be conducted to discover any potential relationships between these variables. The results generated from this correlational design should have the capability to guide future research centered around death anxiety, subjective well-being, and life satisfaction.

III. Methods

a. Participants

Fifteen students from a large university in the Southwestern United States participated. Of those fifteen, about 67% identified as female and about 33% as male. The average age was 19 and 80% of students identified as White/Caucasian, with about 6% identifying as Asian, 6% as Black, and 6% preferred not to respond. If participation had occurred as planned, these numbers would have been reflected in the data.

b. Procedures

Participants were instructed to select an online time slot where they could complete the study. On average, the survey takes about 30 minutes, and participants received course credit for participating. To begin the study, participants were instructed to complete a modified version of the Mystical Experience Questionnaire, or MEQ30. This study was presented to participants as a study about religion and personal experiences so as not to bias or prime their responses.

c. Materials

The following questionnaires were presented to the participants in the order that follows.

1. MEQ30

The MEQ30 is the most commonly used instrument to measure whether a person has experienced a Mystical Type Experience (MTE). To provide context, the MEQ30 “was developed and validated through factor analysis of retrospective accounts of profound

experiences with psilocybin-containing mushrooms (MacLean et al., 2012). That analysis yielded a four-factor structure of the MEQ30, which is usually used quickly after someone has gone through a MTE. For the purpose of this study, the MEQ30 has been modified to reflect on the entirety of a person's life and focus on one specific experience. Here, the MEQ30 is presented as a list of phenomena, followed by instructions and a 4-point response scale.

After reading through the phenomena, students were provided with the following instructions and 5-point scale:

> Think back on the entirety of your life and try to identify one **single experience** from your life that Exhibited these phenomena most strongly. If you have had multiple experiences that exhibited these phenomena, please just focus on the **one strongest experience**. Please rate the degree to which at any time during that session you experienced the phenomena. Answer each question, according to your feelings, thoughts, and experiences at the time of that single experience. In making each of your ratings, use the following scale:
>
> 0 – none; not at all
> 1 – very slight
> 2 – moderate
> 3 – very strong
> 4 – I haven't had an experience like this

Each statement within the MEQ30 was displayed individually, so that each statement could have its own ranking on the 4-point scale and could be responded to in a multiple-choice format.

One's MTE is then quantified with a dichotomous response, "yes," the participant qualifies as having a MTE, or "no," the participant does not qualify as having a MTE. If a participant responds to the MEQ30 with a score of 60% or higher, these responses were classified as a "yes."

2. MTE Activity Questionnaire

Individuals have reported to have MTEs through multiple activities. Most researchers agree that "reports of mystical experience are characterized by unusual perceptual changes that deviate from everyday perceptions and experience" (Andersen et al., 2014). The following instructions and questionnaire were included in this study to narrow down the activities that might lead one to have a MTE. The activity questionnaire was included from a few other commonly reported activities that people were partaking in when they had a MTE.

What activity were you engaging in when you experienced the phenomena you selected above? (Select any/all that apply to the one single experience you were thinking of above).

- Did not experience the above phenomena
- Adventurous sport or hobby
- Meditation or prayer
- At an event surrounded by people/friends
- Artistic expression
- Near-death-experience (NDE) or out-of-body experience (OBE)
- Under the influence of an ingested substance
- Other: please type below
- Prefer not to day

3. Religious Orientation Scale

"Allport and Ross's Religious Orientation Scale (1967), along with Batson and Schoenrade's Quest Scale (1991)" (Brown & Westman, 2010) were used to assess the three religiosity variables (intrinsic, extrinsic, quest). The present study shortened the original scale, which contained a questionnaire with 31 statements. This study includes a questionnaire with a comprehensive list of 28 statements, each of which are related to a specific orientation type. For this study, a 5-point Likert-type response scale accompanies the religion questionnaire.

4. Quiet Ego Construct

The quiet ego is one's ability to "listen to others as a part of psychosocial harmony" (Bauer & Wayment, 2008). In this study, a quiet ego questionnaire is adopted from a previous study that tested the four aspects within the quiet ego: detached awareness, inclusive identity, perspective taking, and growth (Wayment et al., 2014). After the religious orientation questionnaire, participants are presented with instructions, the quiet ego questionnaire, and a 5-point response scale.

Responses were limited to the past year in hopes of generating recent and consistent aspects within the participants' character.

5. Compassion Questionnaire

Compassion can be defined as the tendency for one to help others in need. In the context of this study, the compassion questionnaire serves to gauge one's "prosocial type of behavior; tender emotions and feeling the pain of others and a motivation to act for the community and for the well-being of other," which can be tested through compassion scales (de Abreu et al., 2015; De Concillis, 1993). Compassion can often motivate people to act more altruistically and pursue prosocial behaviors, such as helping others within their community.

The higher score on the questionnaire, the more compassionate one has acted within the past year of their lives.

6. Hostility Questionnaire

The hostility questionnaire measures "a combination of outward resentment and suspicion that is part of aggression" (Buss & Perry, 1992). Within the study, the 8-item hostility questionnaire was presented with a 5-point Likert-type response scale.

Responses were limited to the past year in hopes of generating recent and consistent aspects within the participants' character. The results for the questionnaire will be generated through a factor analysis.

7. Narcissism Questionnaire

The narcissism questionnaire used in this study assesses four aspects of narcissism. These include: exploitativeness/entitlement, leadership/authority, superiority/arrogance, and self-absorption/self-admiration" (Emmons, 1984). The authors of this questionnaire deemed it to have adequate construct validity, accurately measuring one's tendency for narcissism. The narcissism questionnaire has 12 statements and a 5-point Likert-type response scale.

8. Death Anxiety Scale

This scale "reflects a wide range of life experiences and anxiety scales related to topics around death" (Templer, 2010) with 15 statements and a 5-point scale.

At the end of the study, participants were debriefed as to the full intentions of the study.

IV. Results

Linear regression analyses were conducted on each of the dependent variables to test for differences between those who reported having a MTE at some point in their lives and those who did not report ever having a MTE. For means and standard deviations, see Table 1. Due to the limited sample size, one cannot make any confident conclusions from this data. Any significant p-values have to be interpreted very cautiously.

a. Religious Orientation

Those who have had a MTE (M = 3.21, SD = 1.12) trended towards greater intrinsic religiosity, compared to those who have not had a MTE, (M = 1.94, SD = 0.86), $F(1, 13) = 4.116$, $p = 0.063$, $r^2 = .241$. Those who have had a MTE (M = 2.69, SD = 0.73) had slightly but nonsignificantly higher scores on the extrinsic religiosity scale, compared to those who have not had a MTE, (M = 2.50, SD = 0.74), $F(1, 13) = 0.201$, $p = 0.661$, $r^2 = .015$. Those who have had a

MTE had non significantly higher scores for religion as quest, (M = 3.48, SD = 0.87), compared to those who have not had a MTE, (M = 2.94, SD = 0.48), $F(1, 13) = 1.345$, $p = 0.267$, $r^2 = 0.094$.

b. The Quiet Ego

Those who have had a MTE had nonsignificantly higher scores for the quiet ego, (M = 3.94, SD = 0.54), compared to those who did not report having a MTE, (M = 3.46, SD = 0.35), $F(1, 13) = 2.589$, $p = 0.132$, $r^2 = 0.166$.

c. Compassion

Those who have had a MTE had nonsignificantly higherscores on the compassion scale, (M = 4.11, SD. =0.79), compared to those who did not report ever having a MTE, (M = 3.25, SD = 0.62), $F(1, 13) = 0.495$, $p = 0.494$, $r^2 = 0.037$.

d. Hostility

Those who have had a MTE had nonsignificantly lower scores on the hostility scale, (M = 2.70, SD = 0.66), compared to those who did not report having a MTE, (M = 3.25, SD = 0.34), $F(1, 13) = 2.400$, $p = 0.145$, $r^2 = 0.156$.

e. Narcissism

Contrary to our hypothesis, those who have had a MTE had nonsignificantly higher scores on the narcissism scale, (M = 2.86, SD = 0.46), compared to those who did not report having a MTE, (M = 2.58, SD = 0.68), $F(1, 13) = 0.852$, $p = 0.373$, $r^2 = 0.061$.

f. Death Anxiety

Those who have had a MTE did slightly nonsignificantly lowerscores on the death anxiety scale, (M = 3.18, SD = 0.89), compared to those who did not report having a MTE, (M = 3.28, SD = 0.78), $F(1, 13) = 0.041$, $p = 0.843$, $r^2 = 0.003$.

For all variables, due to the reported p values, any trends cannot be stated with confidence. A larger sample of participants may have yielded more convincing support for the hypothesized results.

Table 1. Means and standard deviations for yes-MTE and no-MTE participants

	Survey Results	
	yes-MTE	**no-MTE**

Variable	***M*** **(*SD*)**	***M*** **(*SD*)**	***f*** **value** **(*p*)**
Intrinsic religiosity	3.21 (1.12)	1.94 (0.86)	0.063 (0.241)
Extrinsic religiosity	2.69 (0.73)	2.50 (0.74)	0.201 (0.661)
Quest orientation	3.48 (0.87)	2.94 (0.48)	1.345 (0.267)
Quiet ego	3.94 (0.54)	3.46 (0.35)	2.589 (0.132)
Compassion	4.11 (0.79)	4.42 (0.62)	0.495 (0.494)
Hostility	2.70 (0.66)	3.25 (0.34)	2.400 (0.145)
Narcissism	2.86 (0.46)	2.58 (0.68)	0.852 (0.373)
Death Anxiety	3.18 (0.89)	3.28 (0.78)	0.041 (0.843)

V. Discussion

Due to the small sample size, any conclusions from our comparisons of the MTE and Non-MTE groups cannot be stated with confidence. The hypotheses cannot be either supported or refuted, although it is the hope that if the study were to be replicated in the future, a larger sample size would allow one to make more conclusive findings. The fact that the means were in the right direction for all of the measures except for narcissism suggests that such a replication may indeed yield support for some of the hypotheses. Thus, the study of MTEs and their role in shaping individual attitudes and other variables may prove to be an interesting and important research area.

The between MTEs and attitudes towards other variables is a relatively new niche within Terror Management Theory and mystical experience research. This study intended to contribute to the existing literature to develop a basis for this topic in research. As mentioned above, the relationships between MTEs and other variables are of special interest in the psychology of religion/spirituality, as MTEs might positively contribute to subjective well-being and overall life satisfaction.

One strength of this study is its ability to establish potential trends that could further develop as with a larger sample size. By creating a base study that assesses MTEs with other variables, the relationships between these variables can be accurately tested. Additionally, the present study was designed to ensure that priming would not influence the results, and by placing the death anxiety questionnaire at the end of the study, participant responses should not be influenced by death primes or anxieties related to the topic. There are aspects of this study that could be improved upon if the study were to be replicated or revised, and those are worth mentioning.

One limitation of the study is a lack of attention checks throughout the study to ensure participants' attentiveness. A future study might want to incorporate these checks, as some of the scales are lengthy which could lead to a lack of attentiveness when responding. Furthermore, it would be beneficial for this study to be repeated, potentially taking place in-person with additional behavioral measures. Measuring behavioral tendencies with a questionnaire as opposed to observationally (e.g. observing hostile or narcissistic tendencies) has the potential to yield different results. Hopefully, this study can provide a basis for future studies analyzing the relationships between MTEs and other variables. Understanding how MTEs might correlate to other attitudes might be able to further explain the role of religion/spirituality as a component of individual attitudes and outward behaviors. Additional studies could add to the literature by focusing on MTEs and their relationships to religious/spiritual subscription and how these might correlate to the tendency to exhibit hostile and/or narcissistic behaviors towards members of an outgroup (or belonging to a different religious/spiritual subscription). The same can be said of these relationships and the potential to exhibit compassionate behaviors as well. A different study might explore internal beliefs about mystical experiences, and if individuals who have had a MTE feel that their behaviors have changed towards others after the experience. Additional questions to be considered include the following: How can MTEs demonstrate additional

connections between other variables that have not been studied before? Will there be interactions and/or main effects between some of the previously studied variables and those that are newly introduced? There are many ways in which future studies could take form, all of which could widen our understanding of the role that MTEs might have on attitudes and potentially behaviors.

References

Allport, G., & Ross, J. (1967). Personal religious orientation and prejudice. *Journal of Personality and Social Psychology*, 5, 432-443.

Andersen, M., Schjoedt, U., Nielbo, K., & Sorensen, J. (2014). Mystical experience in the lab. *Method and Theory in the Study of Religion*, 26, 217-245.

Barrett, F., & Griffiths, R. (2018). Classic hallucinogens and mystical experiences: phenomenology and neural correlates. *Behavioral Neurobiology of Psychedelic Drugs*, 36, 393-430.

Barrett, F., Johnson, M., & Griffiths, R. (2015). Validation of the revised mystical experience questionnaire in experimental sessions with psilocybin. *Journal of Psychopharmacology*, 29:11, 1182-1190.

Batson, C., & Hunsberger, B. (1992). Authoritarianism, religious fundamentalist, quest, and prejudice. *The International Journal for the Psychology of Religion*, 2:2, 113-133.

Batson, C., & Schoenrade, P. (1991). Measuring religion as quest: 2) reliability concerns. *Journal for the Scientific Study of Religion*, 30:4, 430-447.

Batson, C., Floyd, R., Meyer, J., & Winner, A. (1999). "And who is my neighbor?:" intrinsic religion as a source of universal compassion. *Journal for the Scientific Study of Religion*, 38:4, 445-457.

Bauer, J., & Wayment, H. (2008). The psychology of the quiet ego. *Decade of behavior. Transcending self-interest: Psychological explorations of the quiet ego*, 7-19.

Brainard, F. (1996). Defining 'mystical experience.' *Journal of the American Academy of Religion*, 64:2, 359-393.

Brown, S., & Westman, A. (2010). Refining Christian religious orientations through cluster analyses. *Archive for the Psychology of Religion*, 33, 229-239.

Burris, C., Jackson, L., Tarpley, W., & Smith, G. (1996). Religion as quest: the self-directed pursuit of meaning. *The Society for Personality and Social Psychology*, 22:10, 1068-1076.

Bushman, E., Bezemer, M., Kerkhof P., & Vermeulen, I. (2008). How terrorism news reports increase prejudice against outgroups: a terror management account. *Journal of Experimental Psychology*, 45:3, 453-459.

Buss, A., & Perry, M. (1992). The aggression questionnaire. *Journal of Personality and Social Psychology,* 63:3, 452-459.

Buss, A., & Durkee, A. (1957). An inventory for assessing different kinds of hostility. *Journal of Counseling Psychology,* 21, 343-349.

Byrd, K. R., Delbert, L., & Schwenka, S. (2000). Mysticism as a predictor of subjective well-being. *The International Journal for the Psychology of Religion,* 10:4, 259-269.

Campbell, W., & Buffardi, L. (2008). The lure of the noisy ego: narcissism as a social trap. *American Psychological Association,* 23-32.

Caneyello, A., & Crocker, J. (2017). Compassionate goals and affect in social situations. *Motivation and Emotion*, 41, 158-179.

Carhart-Harris, R. L., Erritzoe, D., Haijen, E., Kaelen, M., & Watts, R. (2017). Psychedelics and connectedness. *Psychopharmacology*, 235, 547-550.

Chau, L., Johnson, R., Bowers, J., Darvill, T., & Danko, G. (1990). Intrinsic and extrinsic religiosity as related to conscience, adjustment, and altruism. *Personality and Individual Differences*, 11:4, 397-400.

Chumbler, N. R. (1996). An empirical test of a theory of factors affecting life satisfaction: Understanding the role of religious experience. *Journal of Psychology and Theology, 24,* 220–232.

de Abreu, M., Laureano, R., Silva, R., & Dionisio, P. (2015). Volunteerism, compassion and religiosity as drivers of donations practices. International *Journal of Nonprofit and Voluntary Sector Marketing,* 20:3, 256-276.

De Concillis, A. (1993). Individual differences correlate of prosocial behavior: a comparison of three models. Ph.D. Thesis, Loyola College: Baltimore. MD.

Einolf, C. (2011). Daily spiritual experiences and prosocial behavior. *Social Indicators Research,* 110:1, 71-87.

Ellison, C. G. (1991). Religious involvement and subjective well-being. *Journal of Health and Social Behavior, 32,* 80–99.

Emmons, R. (1984) Factor analysis and construct validity of the narcissistic personality inventory. *Journal of Personality Assessment*, 48:3, 291-300.

Greenberg, J., Pyszczynski, T., & Solomon, S. (1986). The causes and consequences of a need for self-esteem: a terror management theory. *Public and Private Self,* 189-212.

Greenberg, J., Pyszczynski, T., Solomon, S., Rosenblatt, A., Veeder, M., Kirkland, S., & Lyon, D. (1990). Evidence for terror management theory II: The effects of mortality salience on reaction to those who threaten or bolster the cultural worldview. *Journal of Personality and Social Psychology,* 58, 308-318.

Greenberg, J., Martens, A., Jonas, E,. Eisenstadt, D., Pyszczynski, T., & Solomon, S. (2003). Psychological defense in anticipation of anxiety: Eliminating the potential for anxiety eliminates the effect of mortality salience on worldview defense. *Psychological Defense,* 14, 516-519.

Griffiths, R., Richards, W., McCann, U., & Jesse, R. (2006). Psilocybin can occasion mystical-type experiences having substantial and sustained personal meaning and spiritual significance. *Psychopharmacology,* 187, 268-283.

Griffiths, R., Richards, W., Johnson, M., McCann, U., & Jesse, R. (2008). Mystical-type experiences occasioned by psilocybin mediate the attribution of personal meaning and spiritual significance 14 months later. *Journal of Psychopharmacology,* 22:6, 621-632.

Griffiths, R., Richards, W., & McCann, U. (2011). Psilocybin occasioned mystical-type experiences: immediate and persisting dose-related effects. *Psychopharmacology*, 218, 649-665.

Gorsuch, R., & Aleshire, D. (1974). Christian faith and ethnic prejudice: a review and interpretation of research. *Journal for the Scientific Study of Religion*, 13:3, 281-307.

Gorsuch. R. L. (1988). Psychology of religion. In Rosenzweig. M. R. & Porter. L. W. (Eds), *Annual review of Psychology*, 39. 201-221.

Hood, R., & Francis, L. (2013). Mystical experience: conceptualizations, measurement, and correlates. *APA handbook of psychology, religion, and spirituality,* 1: 391-405.

Johansson, N., & Lally, T. (1990). Effectiveness of a death-education program in reducing death anxiety of nursing students. *Journal of Death and Dying,* 22:1, 25-33.

Kesebir, P. (2014). A quiet ego quiets death anxiety: humility as an existential anxiety buffer. *Journal of Personality and Social Psychology*, 106:4, 610-623.

Kirkpatrick, L., Hood, Jr., R. (1990). Intrinsic-extrinsic religious orientation: the boon or bane of contemporary psychology of religion? *Journal for the Scientific Study of Religion*, 29:4, 442-462.

Lau, R., & Cheng, S. (2011). Gratitude lessens death anxiety. *European Journal of Ageing,* 8, 169-175.

Mohandas, E. (2008). Neurobiology of spirituality. *Medicine, Mental Health, Science, Religion, and Well-being,* 6:1, 63-80.

MacLean, K., Leoutsakos, J., & Johnson, M. (2012). Factor analysis of the mystical experience questionnaire: a study of experiences occasioned by the hallucinogen psilocybin. *Journal for the Scientific Study of Religion,* 51, 721-737.

Moreton, S., Szalla, L., Menzies, R., & Arena, A. (2019). Embedding existential psychology within psychedelic science: reduced death anxiety as a mediator of therapeutic effects of psychedelics. *Psychopharmacology,* 237, 21-32.

Peterson, L. R. & Roy, A. (1985). Religiosity, anxiety, and meaning and purpose: Religion's consequences for psychological well-being. *Review of Religious Research, 27,* 49–62.

Pollner, M. (1989). Divine relations, social relations, and well-being. *Journal of Health and Social Behavior, 30,* 92–104.

Pyszczynski, T., Rothschild, Z., & Abdollahi, A. (2008). Terrorism, violence, and hope for peace: a terror management perspective. *Association for Psychological Science,* 17:5, 318-322.

Register, M., & Herman, J. (2010). Quality of life revisited. *Advances in Nursing Science,* 33:1, 53-63.

Rosenblatt, A., Greenberg, J., Solomon, S., Pyszczynski, T., & Lyon, D. (1989). Evidence for terror management theory: I. The effects of mortality salience on reactions to those who violate or uphold cultural values. *Journal of Personality and Social Psychology,* 57(4), 681-690.

Routledge, C., & Vess, M. (2019). *Handbook of Terror Management Theory.* San Diego: Academic Press.

Templer, D. (2010). The construction and validation of a death anxiety scale. *The Journal of General Psychology,* 82:2, 165-177.

Thorson, J., & Powell, F. (1990). Meanings of death and intrinsic religiosity. *Journal of Clinical Psychology,* 46:4, 379-391.

Wayment, H., Bauer, J., & Kateryna, S. (2014). The quiet ego scale: measuring the compassionate self-identity. *Journal of Happiness Studies,* 16, 999-1033.