

WHO'S BEING TRANSCENDED?
THE ROLE OF BELIEF OF OTHER AS SELF IN MEDIATING THE RELATIONSHIP
BETWEEN MYSTICAL EXPERIENCE AND MENTAL HEALTH

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ABSTRACT

Throughout history humans have experienced instances where the boundary between self and other dissolved, and the ordinary sense of “I” was replaced with a unity to all of existence or a higher power. These are commonly referred to as mystical experiences, and although the relationship between mystical experiences and positive mental health outcomes has largely been supported, the psychological mechanisms underlying it are unknown. This study develops a scale to test the theory that Belief of Other as Self (BOS) mediates the relationship between mystical experience and mental health. This study also hypothesizes spiritual practice and time elapsed since one’s most recent mystical experience moderate the strength of the aforementioned relationship. Results support BOS as a mediator, while neither elapsed time nor spiritual practice were found to be moderators. These findings reveal the need for developing clinical interventions targeting a patient’s fundamental sense of self to improve mental health.

DEDICATION

I would like to dedicate this thesis to G-d, my wife, and my parents. I'm thankful that G-d has blessed me with the desire, ability, and opportunity to follow my curiosity about the nature of the world. My hope is that my research glorifies G-d and furthers His Kingdom. Thank you to my wife, Harin Mun Ishak, for all the sacrifices you have made for me and for supporting my academic goals. Thank you to my parents for always believing in me and helping me chase my dreams. This thesis wouldn't have been completed if it were not for you.

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INTRODUCTION

In this thesis I set out to explore the relationship between mystical experience and mental health. My primary goal was to uncover a psychological mechanism underlying the relationship, and I also wanted to determine which factors the relationship is contingent upon. To do this, I begin this thesis with a religious and psychological overview of mystical experience and then discuss its relation to mental health. Next, I introduce the theory of Belief of Other as Self (BOS) and propose it as a mediator of the relationship between mystical experience and mental health. This hypothesis is theoretically justified through the discussion of self-concept and its relation to both mystical experience and mental health. I also propose that both spiritual practice and time elapsed since one's last mystical experience moderate the relationship between mystical experience and positive mental health outcomes, and a study to test these hypotheses is presented. The BOS scale is validated as an appropriate measure, and the three hypotheses are tested. Finally, I conclude by considering the implications of the findings and suggestions for future studies.

PART I.
THE MYSTICAL EXPERIENCE

CHAPTER I
MYSTICAL EXPERIENCE IN RELIGION AND PSYCHOLOGY

“And I tell you the truth, some standing here right now will not die before they see the Son of Man coming in his Kingdom.”
– Matthew 16:28

Mystical Experience and the Common Core

Mysticism, in modern usage, is the belief in, and/or practice of, becoming one with the Absolute. A mystical experience, then, is the experience of becoming one with the Absolute. This paper uses the term Absolute to refer to the ultimate deity and/or principle religions refer to. The Absolute has been conceptualized under a variety of terms: God, Brahman, Buddha, Nature, Ultimate Reality, and countless others. Throughout history and across religious traditions, mystical experiences have been recorded and are oftentimes the goal of spiritual and religious pursuit. Although religions have different frameworks from which they interpret mystical experiences, based on the history, linguistics, and culture of its people, there is a shared belief across religions that man can transcend the normally perceived limits of his nature and enter into oneness with the Absolute.

The idea that the root of all religions is fundamentally the same is known as the Common Core thesis. It is similar to perennialism but differs in that the common core thesis does not claim any common values or practices are derived from the mystical experience (Hood, 2016).

Although religions have rich descriptions of the Absolute, i.e., their ultimate deity, which have

seeming incompatibilities with each other, the common core thesis would explain these differences as a result of interpreting that which is essentially ineffable. The common core thesis is rooted in the works of William James, in which he stated personal experience is the “root and centre” of all religions (James 1902/1985 p. 301), and it is based on the dissolution of the ego and experience of unity common to mystical experiences. Examining mysticism from various religions and in psychology will allow us to see the similarities of the mystical experience across traditions more plainly.

Mystical Experience Across Religions

Existing within the majority of religions is a mystical tradition that interprets religious claims in terms of personal experience, in which religious texts, practices, and beliefs are used as a means of experiential unification with the Absolute. Religions differ across tradition and time in the degree to which they accept mystical traditions as valid interpretations of their religion. Mystical traditions often live at the fringe of religion, although they are likely to argue they reside in the center.

Within Christianity, the Eastern Orthodox denomination has perhaps the most apparent mystical tradition. Eastern Orthodox Christians believe in and aim to progress along the path of theosis, which is the process of unification of man with God/Absolute. This tradition can be accurately represented through a quote by Saint Athanasius, in which he says, “God became man that man might become God,” (Athanasius et al., 1903). To Eastern Orthodox Christians, theosis is considered to be the purpose of human life (Bartos, 1999). Theologian Vladimir Lossky stated in *The Mystical Theology of the Eastern Church* (1957, p. 14) that “Theology in the East is not a

discourse on God, but an experience of the divine presence. It is not the result of intellectual speculation or rational inquiry, but of spiritual vision and mystical intuition”.

In addition to the Eastern Orthodox denomination, there are other Christian movements and denominations that have mystical elements. Protestant mysticism emphasizes the “Christ within”, and the Protestant priest William Law once remarked, “The eternal Word of God lies hid in thee, as a spark of the divine nature,” (Law, 1780). In Catholicism there is a traditional monastic practice called *Lectio Divina*, which consists of scriptural reading, meditation, and prayer, which is intended to promote communion with God (Dysinger, 2008). One of the most influential Roman Catholic philosophers and theologians, Thomas Aquinas, had a religious experience so moving that he abandoned writing without finishing his work, *Summa Theologiae*, stating that, “I can write no more. I have seen things that make my writings like straw,” (as cited in Chesterton, 1974). Further, Catholic theologian Meister Eckhart said in one of his sermons, “The eye through which I see God is the same eye through which God sees me; my eye and God's eye are one eye, one seeing, one knowing, one love,” (as cited in Radler, 2006). In the mystical tradition of each of these branches of Christianity, there is a shared component of dying to self and unity with God.

Examining the other Abrahamic religions, the most well-known mystical tradition in Judaism is Kaballah, which has three primary aims or divisions: Theosophical/Speculative Kabbalah, Practical/Magical Kabbalah, and Meditative/Ecstatic Kabbalah. Theosophical and Practical Kabbalah are concerned with understanding and altering the divine, respectively, whereas Meditative Kaballah is concerned with achieving union with God/Absolute (Ginsburgh, 2006). Within Islam, Sufism is the tradition most strongly associated with mysticism. Sufism has

been described as the spirituality of Islam, in which Sufis aim to attain unification with Allah/Absolute through direct personal experience (Heck, 2006). In this pursuit, Sufis attain “fanaa,” which means “to die before one dies.” This elimination of self and absorption into God is the highest goal for the Sufi (Nilchian, 2011). Bāyazīd Bisṭāmī, a prominent Sufi figure and main expositor of fanaa, claimed, “Whoever is annihilated in God and attains to the reality of everything, he becomes all Truth, if he is not there, it is only God that sees Himself,” (as cited in Fatemi, 1998).

Turning to non-Abrahamic religions and philosophies, we see a more conspicuous mystical orientation. In Buddhism, most traditions emphasize transcending the individual self through either the attainment of Nirvana, a term that literally means “blowing out” or “extinction”, or through following the path of becoming Buddha/Absolute, which ends the cycle of death and rebirth (Gethin, 1998). A rather brash quote by Buddhist sage Linji emphasizes the non-dual realization of Buddhahood in oneself: “If you meet a Buddha, kill the Buddha,” (as cited in Watson, 1999). Chan Buddhism, also known as Zen Buddhism, is a branch of Buddhism that employs paradoxical psychological devices known as koans in order to transcend the rational mind and reach kensho, or the realization of Buddha-nature (Hori, 2000).

Often referred to as a natural religion or philosophy, Taoism/Daoism proposes a common Nature/Absolute to all things, or in all things being one. Realizing that we are microcosms of the world and all its processes, Taoists understand they are unified with the totality of existence. Taoists believe eternal life can be attained through an ecstatic active participation in the transformations of the universe or through an ecstatic union with the Tao/Absolute (Kohn, 1990). A passage in the *Zuowanglun* on realizing the Tao illustrates the mystical aim of Taoism: “Daily

increasing in merit, one's disposition will change to unite fully with the spirit. By refining the spirit to a higher subtlety, one will then realize mystical union with the Tao,” (as cited in Kohn, 1990).

The last religious tradition we will mention is Hinduism. Although Hinduism is an expansive system that includes a variety of different practices, philosophies, and ways of life, various Hindu practices aim at transcending the limited identification with body, mind, and ego to attain moksha. Moksha is considered the ultimate goal of Hindus, and it is associated with liberation from suffering and with identification of self as Brahman/Absolute (Potter, 1958). The Advaita Vedanta school of Hinduism has five Great Sayings which represent the essential unity of self and Absolute: *Tat tvamasi*, which means “That Thou Art” or more colloquially, “You’re It,”; *AhamBrahmasmi*, meaning “I am Brahman,”; *prajñānam brahma*, meaning “Brahman is the highest form of understanding,”; *Ayamātmā brahma*, which means “This Self is Brahman,”; and *Sarvamkhaluidam brahma*, which means “All this is Brahman.” These Great Sayings have been considered the fundamental teaching of all the Upanishads, which are the texts that provide the basis of Hindu philosophy (Sahoo, 2017).

From this brief overview of religious traditions, we can see a common mystical emphasis shared by each – an aim of unification with the Absolute by transcending identification with a limited self. Although the experience of unification with the Absolute has been recorded and described throughout history and across cultures, and it is the telos of religions adhered to by millions of people across the globe, relatively little attention has been given to these experiences outside the domain of religion. Even more astounding is the lack of investigation of these experiences from a psychological perspective, especially in the clinical domain where it stands to

reason that understanding the qualities of experiencing unification with the Absolute could assist clinicians in alleviating psychological suffering. Although it can be argued the exclusion of mystical experience from academic investigation is due to seeming incompatibilities between science and spirituality, these incompatibilities are largely due to modern science's subscription to reductive physicalist axioms – axioms which are not an inherent part of science (Plantinga, 2011) With that being said, the psychological investigation of mystical experience isn't nil.

The Psychological Study of Mystical Experience

No discussion of the study of mystical experience would be complete without mention of William James. James' *The Varieties of Religious Experience: A Study in Human Nature* is largely considered to be the foundation of the Western psychological study of individual experiences of the Absolute, which James referred to as religious experience, and his book brought mystical experience into mainstream psychological discussion. James, unlike many who succeeded him, saw value in these states of unity. He stated, "We must judge the tree by its fruits. The best fruits of the religious experience are the best things history has to offer," (James, 1902/1985). James noted religious experiences were characterized by ineffability (they cannot be fully described in language), passivity (they are unable to be controlled), transiency (they are brief), and a noetic quality (they feel like a source of real knowledge) (Goodman, 2021). James also supports the idea of a common core to all religious experiences in the following quote by saying the non-intellectual experience can be described through various interpretations:

The fact is that mystical feeling of enlargement, union, and emancipation has no specific intellectual content of its own. It is capable of forming matrimonial alliances with

material furnished by the most diverse philosophies and theologies provided only that they can find a place in their framework for its particular emotional mood. (p. 337)

Several decades after James' *Varieties*, Walter Stace made an impact on the study of mystical experience by expounding upon the idea that the mystical experience should be distinguished from its interpretation (Stace, 1960). Stace argued all mystical experiences are essentially the same, while also saying there are two directions of mystical experience: the extrovertive and the introvertive. In the former, an outward union is achieved with the objects of the external world through perception, whereas in the latter an inward union is achieved within the self, and that union is devoid of sensory and conceptual content. In Stace's (1960) words, "It should follow that just as there are in it no distinctions between one object and another there can likewise be no distinction between subject and object" (p. 111). Stace also went on to describe nine qualities of mystical experience: ego (the loss of sense of self), unifying (everything is perceived as One), paradoxicality (defies logic), inner subjectivity (the perception of inner subjectivity to all things), temporal/spatial (beyond space and time), noetic, ineffability, positive affect, and religious (intrinsic sacredness of the experience and feelings of mystery, awe, and reverence). Stace's study of mystical experience laid the theoretical groundwork that led to the development of an empirically based assessment of mystical experience.

Based on Stace's 8 qualities of mystical experience, paradoxicality excluded, and the distinction between introvertive and extrovertive mystical experience, Ralph Hood Jr. developed the M-Scale to assess mystical experience (Hood, 1975). The M-Scale is the most commonly used measure to assess mystical experience, and initial factor analyses reveal two factors: general mystical experience and religious interpretation. However, subsequent analyses in university

students (Caird, 1988), psychiatric patients with religious delusions or experiences (Reinert & Stifler, 1993), American Protestants and Iranian Muslims (Hood et al., 2001), Israeli Jews (Lazar & Kravetz, 2005), Indian Hindus (Anthony et al., 2010), Chinese Christians and non-Christians (Chen et al., 2012), and Tibetan Buddhists (Chen et al., 2011) have all revealed three factors with some variation in factor loading, supporting Stace's theory of introvertive, extrovertive, and interpretation of mystical experience. Research has also found Hood's M-Scale accurately describes the experience of Buddhist monks framed by Buddhist doctrine (Chen et al., 2011). Most factor analyses of the M-Scale report significant correlations among factors, which provides support for Hood's Common Core thesis that all mystical experiences are essentially the same experience across all religions and faith traditions, and differences in interpretation arise due to historical, cultural, and philosophical differences, among others (Hood, 2016).

The last figure we will discuss in the conceptualization of mystical experience is David Yaden. In Yaden's comprehensive review *The Varieties of Self-Transcendent Experience*, Yaden introduces the term Self-Transcendent Experience (STE) to operationalize and capture varying intensities of mystical-like experiences while also avoiding spiritual connotations associated with terms like "mystical" (Yaden et al., 2017). In this paper, Yaden defines STEs as transient mental states marked by decreased self-salience and increased feelings of connectedness. These characteristics align with Stace's ego and unifying qualities of mystical experience. Yaden proposes STEs are made up of two components: an annihilational component and a relational component. The former refers to the subjective experience of self-loss, while the latter refers to the subjective experience of connectedness with other. The difference between STEs and mystical experience is the degree of intensity of the experience: STEs include mystical experiences but they also include somewhat regular experiences like losing oneself in music.

Within psychological literature there have been other conceptualizations of experiences marked by self-transcendence, such as flow, awe, peak experiences, mindfulness states, and others. However, Yaden's conceptualization of Self-Transcendent Experience encompasses all of these (Yaden et al., 2017), so we will bypass an overview of these related constructs in this section but will briefly discuss them in the following section when examining STEs and mental health.

Outcomes of Mystical Experience

Since the primary purpose of this paper is ultimately to provide the framework to support a proposed mediator for the relationship between mystical experience and positive psychological outcomes, this section primarily focuses on that relationship.

Mindfulness, which is a means of enlightenment in Buddhism, and which has become a hot topic of scientific investigation, has a self-transcendent aspect in that advanced practitioners can experience states of nondual awareness (Vago & Silbersweig, 2012). In states of nondual awareness, the distinction between other and self is dissolved. Mindfulness research has found mindfulness-based therapy can be an effective treatment for clinical problems such as anxiety, depression, and stress (Grossman et al., 2004; Khoury et al., 2013), as well as substance-use disorders (Witkiewitz et al., 2013) and problem gambling (de Lisle et al., 2011). Mindfulness has also been shown to increase prosocial behavior (Luberto et al., 2018) and improve well-being and self-regulation (Baer, 2003; Davidson & McEwen, 2012; Goyal et al., 2014).

Another type of STE is flow. Flow is an experience in which individuals are fully involved in the present moment while engaged in a challenging and intrinsically-rewarding activity (Nakamura & Csikszentmihalyi, 2014). In states of flow, there is a merging of action and

awareness, loss of reflective self-consciousness, and a distortion of temporal experience.

Csikszentmihalyi proposed flow can lead to a fulfilled life and research has found positive emotion often follows experiences of flow (Csikszentmihalyi & LeFevre, 1989; Rogatko, 2009).

Experience of flow has also been associated with higher self-determination and intrinsic motivation (Kowal & Fortier, 1999).

Peak experiences are another STE related to mystical experience coined by Maslow, which he described as oceanic, elevating experiences characterized by loss of judgment of time and space, being united with the entirety of oneself, and positive affect, among others (Maslow, 1962). Reports of peak experiences often include intense happiness and transcendent or mystical aspects (Mathes et al., 1982), as well as the desire for prosocial behavior and devotion to self-transcending aims (Magen, 1996).

Examining non-psychopharmacologically occasioned mystical experiences, i.e., mystical experiences not occasioned by the use of substances, psychological outcomes of these experiences have been hard to assess directly. Few studies have compared differences in psychological health between individuals who have reported having a naturally-occurring mystical experience to those who have not. The limited research that has been conducted has found that spontaneous mystical experiences and mystical experiences in nature are associated with improved mental health (Van der Tempel & Moodley, 2020; Snell & Simmonds, 2015), and mystical experiences are often perceived as positive (Corneille & Luke, 2021).

Research on the outcomes of mystical experience becomes more abundant when looking at psychedelic-occasioned mystical experiences. Through the administration of psychedelics, which have been found to reliably induce genuine mystical experiences (Yaden et al., 2017),

researchers have been able to assess the effects of mystical experiences. Research using psilocybin with treatment-resistant depressive patients found higher ratings of mystical experience were significantly related to lower scores of depression, and these effects remained at the follow-up study 6 months later (Carhart-Harris et al., 2017). Psilocybin administration has also been found to reduce depression and anxiety in patients with life-threatening cancer (Griffiths et al., 2016), and a relatively small meta-analysis of four psilocybin studies found reduced depression and anxiety in adults with elevated symptoms (Goldberg et al., 2020). It was also found in an experimental study that $\frac{2}{3}$ of participants who were administered psilocybin had a mystical experience and rated their experience as among the top five most meaningful experiences of their lives (Griffiths et al., 2006). Classic psychedelic use has also been found to be associated with reduced psychological distress and suicidal ideation, planning, and attempts, as well as with reduced negative mental health outcomes (Hendricks et al, 2015; Krebs & Johansen, 2013)

Although there is a growing body of evidence supporting the assertion that mystical experiences have positive effects on mental health and wellbeing, there is also some evidence that indicate mystical experiences, or individual elements of mystical experiences, can have negative effects on individuals. Since Stace's framework for mystical experience includes positive affect, it is difficult to say under this framework that a mystical experience has negative effects, unless the negative effects stem from consequences of actions taken during a positive mystical experience, because the defining criteria for mystical experience itself excludes any experience that involves negative affect.

Then, to examine the negative effects of mystical experience, we instead turn back to Yaden's criteria of self-transcending experiences. Remember, STEs are transient mental states marked by decreased self-salience and increased feelings of connectedness, which are the respective ego and unity elements of Stace's framework. There is overlap between these characteristics and symptoms of clinical disorders. For example, in some schizophrenic and psychotic patients, there is a sense of self-loss (Ferri et al., 2012). Further, there is a category of disorders in the DSM-5 named Dissociative, and these disorders are marked by a sense of detachment or distortion from one's usual sense of self. However, even though mystical experience and certain pathologies have an overlapping element of self-loss, research has found that individuals who have undergone a mystical experience are not more likely to have psychotic or neurotic tendencies compared to the normal population (Caird, 1987). A study examining spontaneous mystical experiences among atheists found that although most participants reported improved mental health, some participants reported stress and emotional distress which lasted from a few weeks to more than a year (Van der Tempel & Moodley, 2020).

Looking specifically at psychedelics and negative mental health outcomes, we can find a bit more evidence for a negative relationship. One study found that after respondents' worst psilocybin-induced "bad trip", a minority of respondents reported seeking treatment for enduring psychological symptoms, and an even smaller minority reported having attempted suicide (Carbonaro, 2016). Although it is not clear how negative psilocybin experiences differ from psilocybin-occasioned mystical experiences, there is likely much overlap between the characteristics. So, although mystical experiences are characterized as experiences consisting of positive affect and are largely found to be associated with positive psychological outcomes, there are mystical-adjacent experiences that can consist of negative affect and outcomes.

The Common Core Revisited

From the previous discussion of mysticism in various religious traditions, we see that religious adherents from all major faith traditions have had these mystical experiences, and from the review of the psychological research we have evidence for common features of the experience across religions and even among the non-religious. This religious and psychological evidence lends weight to the Common Core thesis: the idea that underlying all faith traditions is one root and center. However, this idea isn't without controversy. Critics of the common core thesis claim the various rich traditions, beliefs, and practices of religions can't be reduced to a single core. Further, social constructivists, such as Katz (1978), claim no experience can be unmediated. In other words, an experience can't be divorced from the interpretation because the interpretation is the experience. As the purpose of this thesis is not to persuade you to accept the common core thesis, but rather to provide the necessary foundation to support the forthcoming study, I will simply conclude this chapter with a relevant quote from Pseudo-Dionysius Areopagita: "If anyone seeing God, understood what he saw, he saw not God Himself, but something belonging to God," (as cited in Aquinas, n.d.).

CHAPTER II

CONNECTING EXISTING LITERATURE TO NEW THEORY

“Whatsoever is, is in God, and without God nothing can be, or be conceived.”
– Baruch Spinoza

Belief of Other as Self

From the previous chapter, we see convincing evidence for the positive psychological effects of mystical and self-transcendent experiences. From reduced anxiety and depression to more prosocial behavior and reported meaning in life, these experiences have been found to impart a variety of benefits to the individuals undergoing them. Although this positive relationship has been generally supported, the psychological mechanisms underlying the relationship are still unknown. Why are mystical experiences associated with positive psychological outcomes?

Looking again at Stace/Hood and Yaden’s characteristics of mystical experience, both include an aspect of self-expansion/dissolution. Most of the religious mystical traditions previously discussed also had an aspect of self-expansion/dissolution, which can be conceptualized as a loss of boundaries between self and other. In other words, in a mystical experience the boundary between self and other expands to include the entirety of other, or, depending on interpretation, it dissolves entirely because there becomes no self which exists

separate from anything else. The following account from Dr. Jane Goodall (2005) accurately represents the self-expansion/dissolution aspect of a mystical experience:

Lost in awe at the beauty around me, I must have slipped into a state of heightened awareness. It is hard – impossible really – to put into words the moment of truth that suddenly came upon me then. Even the mystics are unable to describe their brief flashes of spiritual ecstasy. It seemed to me, as I struggled afterward to recall the experience, the self was utterly absent: I and the chimpanzees, the earth and trees and air, seemed to merge, to become one with the spirit power of life itself. (p. 59)

Self-expansion/dissolution is a main feature of mystical experiences, and it may be able to explain, in part, why mystical experiences are related to positive psychological outcomes. Research on the self has found excessive self-focus is associated with a number of negative outcomes, such as depression, anxiety, and social anxiety (Ingram, 1990), shame and guilt (Lewis, 1995), and disgust (Rozin et al, 1995). It has also been found that lack of self/other overlap in an individual's self-concept is associated with anxiety, depression, and suicide (Baumeister & Tice, 1990). Lastly, discrepancy between actual and ideal/ought selves is associated with anxiety and depression (Higgins, 1989).

It stands to reason that the temporary expansion/dissolution of the self occurring in mystical experience eliminates the negative effects of excessive personal self-focus, self-discrepancy, and lack of self/other overlap, and the same effects are likely to occur, to a lesser degree, in less intense forms of STEs. In addition, as it has been found that psychedelics can enhance suggestibility and lead to changes in belief (Carhart-Harris et al, 2015; McGovern et al, 2022; Nayak et al, 2023), it is possible the self-expansion/dissolution occurring in mystical

experience persists after the mystical experience subsides, in the form of belief in ontological connectedness. Ontological connectedness refers to the idea that all entities, properties, and relations in existence are inherently interconnected and interdependent, and it suggests that there is a fundamental unity to all aspects of being. In terms of the self, this means that self and other are essentially the same, although they may appear separate.

Before moving on, I want to lay out the rationale for this idea more clearly. The self has been defined in a countless number of ways (Baumeister, 1991). Instead of giving a restrictive definition of the self, I will simply define the self as whatever an individual includes as part of their self, as opposed to what they consider to be “other”. In a mystical experience, this boundary between self and other dissolves. Self no longer has any meaning because there is nothing to contrast it with. This idea of the self can also be understood as the loss of the reflexive self and the emergence of the soulful self (Hood Jr, 2002). I posit the experience of dissolution of self in mystical experience leads to the belief that, fundamentally, there is no difference between self and other. This study coins the term Belief of Other as Self (BOS) to describe and measure the degree to which one’s self-concept includes entities ordinarily referred to as “other”, such as a loved one, strangers, one’s ideal self, nature, and God / all of existence. This study proposes that BOS mediates the relationship between mystical experience and mental health outcomes.

Time Since Mystical Experience

Although research on psilocybin has generally supported the relationship between mystical experience and positive mental health outcomes, much of the research has assessed participants immediately, or up to six months, after the psilocybin-induced mystical experience. In a study assessing previous mystical experience independent of psilocybin and without

assessing time since the experience, psychological health was not significantly related to mystical experience (MacDonald et al, 2015). Since the odds are low that the participants happened to have undergone their mystical experience within six months of responding to the survey, the lack of relationship between mystical experience and psychological health could be due to a diminishing effect occurring some amount of time after six months.

Spiritual Practice

Furthermore, although there is not an abundance of literature to support the hypothesis, it stands to reason that engaging in spiritual practice before or after a mystical experience would prolong the positive effects of that experience. Engaging in spiritual practice before undergoing a mystical experience could act as preparation for the experience, allowing individuals to have a more fruitful experience and extend its positive effects. Engaging in spiritual practice after a mystical experience would allow individuals to put into practice the insights they learned from the experience, which is also likely to extend the positive effects of the experience. This is in line with most forms of therapy and learning in general, where individuals have to integrate what they learn to sustain the effects. One study specifically assessing psilocybin dosage and support sessions found that participants in a High-Dose High-Support condition had significantly higher ratings of positive social effects, positive behavior change, and increased spirituality than participants in a High-Dose Standard-Support condition at a six-month assessment (Griffiths et al., 2018).

Based on these lines of reasoning and the supporting evidence, this study proposes that both the amount of time elapsed since one's last mystical experience and spiritual practice

moderate the strength of the relationship between mystical experience and positive mental health outcomes.

PART II
TESTING THEORIES

CHAPTER III

CURRENT STUDY

Current Study

The current study constructs and validates a measure of Belief of Other as Self (BOS) and examines how the BOS of individuals who have undergone a mystical experience differ from those who have not. It also assesses how time since one's mystical experience and engagement in spiritual practice relate to mental health outcomes. The following three hypotheses are tested:

1. Belief of Other as Self (BOS) positively mediates the relationship between mystical experience and mental health outcomes.
2. The amount of time elapsed since an individual's last mystical experience negatively moderates the strength of the relationship between mystical experience and mental health outcomes.
3. Engagement in spiritual practice positively moderates the strength of the relationship between mystical experience and mental health outcomes.

Participants

For the current study, participants aged 18 and older were recruited through social media to complete a survey. Specifically, calls to participation were sent through Facebook, Twitter,

LinkedIn, and Reddit in an attempt to include participants of various political, religious, and ideological backgrounds.

A total of 699 participants completed the survey. 323 responses were removed for not completing at least 60% of the survey. Additionally, 18 responses were removed due to not passing at least two of the three attention checks, and one response was removed because the participant was under 18 years of age. After removing the ineligible responses, the final sample size for the study was 357 participants.

The age range of the participants was 18 to 85 years old, with a mean age of 39.80 years ($SD = 15.88$). Participants' religious identification can be found in Table 1. Of the 31.1% of respondents who indicated Other for their religion, many reported in an open-response follow up question that they were a mix of several religions. Many also reported they do not have a religious affiliation but distinguished that from atheism.

Participants did not receive monetary compensation for participation. The Institutional Review Board of the University of Tennessee at Chattanooga approved the study, and all participants gave their informed consent before participation.

Table 1 Participant Demographics

Characteristics	<i>n</i>	%
Age Group		
18-25	56	15.7
26-40	120	33.6
41-60	80	22.4
61-85	44	12.3
No Response	57	16.0
Religious Identity		
Christianity	100	28.0
Judaism	2	0.6
Islam	13	3.6
Buddhism	21	5.9
Hinduism	4	1.1
Gnosticism	7	2.0
Atheism	16	4.5
Agnosticism	24	6.7
Satanism	1	0.3
Paganism	4	1.1
Other	111	31.1
No Response	54	15.1
Religious/Spiritual		
Religious but not spiritual	6	1.7
More religious than spiritual	19	5.3
Equally religious and spiritual	88	24.6
More spiritual than religious	65	18.2
Spiritual but not religious	93	26.1
Neither spiritual nor religious	31	8.7
No Response	55	15.4

Note: Values are rounded to one decimal place, so the percentages may not add up to 100.

Measures

Belief of Other as Self Scale

Belief of Other as Self (BOS) was assessed using a modified, five-item version of Aron's Inclusion of Other in the Self scale (Figure 1). The Inclusion of the Other in the Self (IOS) scale

is a pictorial tool used to measure the subjectively perceived closeness of a relationship. It has been found that the IOS scale is a psychologically meaningful and highly reliable measure of the subjective closeness of relationships (Gachter et al., 2015). For this study, the IOS was modified to assess how much an individual includes a closest other, one's ideal self, strangers, the natural environment, and God / all of existence into one's fundamental sense of self. These items were generated deductively through consideration of the spiritual, natural, social, and psychological domains the self is in relation to but commonly perceived to be separate from. The scale was also modified to include a circle indicating complete overlap of oneself with other.

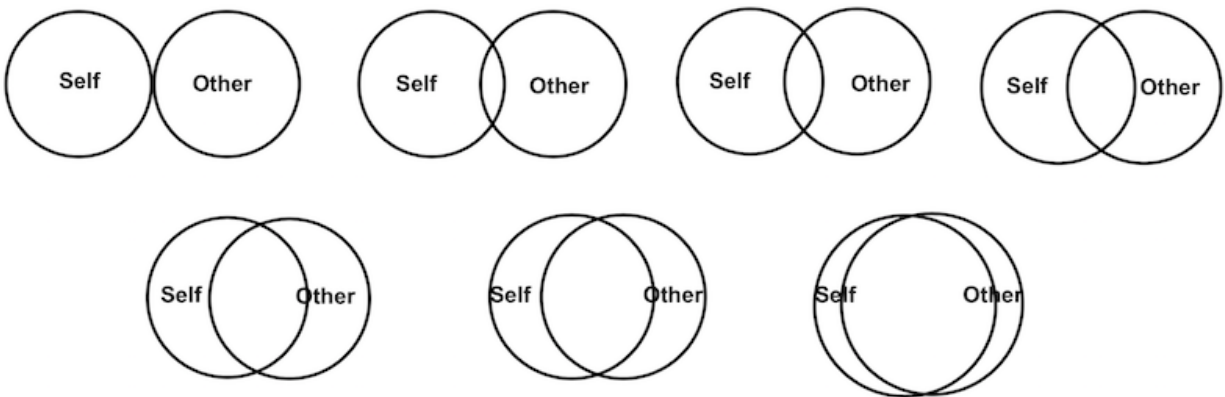


Figure 1 Aron's Inclusion of Other in the Self

The BOS scale was administered to 287 participants and showed good reliability ($\alpha = .81$, $\omega = .81$), indicating the items were internally consistent. Additionally, the Cronbach's alpha coefficient decreased when any item was removed (α range = .76 to .79). The inter-item correlation matrix indicated moderate to high correlations between the items (Table 2), ranging

from .37 to .68, and item-total statistics showed that all items were positively correlated with the total score ($r = .54$ to $.66$), suggesting the scale has good internal consistency and is measuring a single construct. Mean, skewness, and kurtosis are reported in Table 3.

Factor analysis was conducted to further assess whether the BOS scale represents a single construct. Prior to analysis, assumptions were checked using KMO and Bartlett's test. The KMO measure of sampling adequacy was .784, and Bartlett's test of sphericity was statistically significant, $\chi^2(10) = 480.54$, $p < .001$. To explore the number of factors underlying our set of data, we first conducted a principal components analysis. One factor, which explained 57.42% of the variance in the items, had an Eigen value greater than one. The scree plot visually indicated one component as well. A parallel analysis further supported one component, where random data generated a larger Eigen value than our data at two components, suggesting one component underlying our data. One component was extracted, and the component matrix revealed factor loadings were good (Table 3), ranging from .697 to .811. The communalities ranged from .485 to .657.

Table 2 Inter-Item Correlation Matrix

	Closest Other	Ideal Self	Strangers	Natural Environment	God / All Existence
Closest Other	—				
Ideal Self	.452	—			
Strangers	.677	.435	—		
Nature	.444	.441	.522	—	
God / All Existence	.365	.388	.387	.548	—

$n = 287$

Table 3 Descriptive Statistics for BOS

Variable	<i>M</i>	<i>SD</i>	Variance	Skewness		Kurtosis	
				Statistic	Std. Error	Statistic	Std. Error
1. Closest Other	4.52	1.78	3.16	-.32	.14	-.84	.28
2. Ideal Self	4.42	1.77	3.15	-.28	.14	-.78	.28
3. Strangers	3.24	1.78	3.18	.65	.14	-.43	.28
4. Nature	4.89	1.88	3.55	-.52	.14	-.89	.28
5. God / All Existence	5.51	1.88	3.52	-1.02	.14	-.19	.28

n = 287

Table 4 Belief of Other as Self (BOS) Item Loadings

Belief of Other as Self item	Factor 1
Closest Other	.785
Ideal Self	.707
Strangers	.811
Nature	.783
God / All Existence	.697

n = 287

Primal World Beliefs – Interconnectedness Subscale

Theoretically, Belief of Other as Self is related to the belief in the interconnectedness of all things. The Primal World Beliefs - Interconnectedness measure is one of 26 primal world beliefs identified by Jer Clifton (2019). The Primal World Beliefs measure an individual’s beliefs about the world as a whole. The Interconnectedness primal measures the belief that all things and situations are connected to each other in fundamental ways. Its opposite believes the world is

largely full of mostly independent entities or situations. The scale consists of six items, ranging from Strongly Disagree to Strongly Agree.

In order to assess construct validity, the relationship between Belief of Other as Self (BOS) and the Primal World Beliefs - Interconnectedness scale was assessed. The correlation between the two measures was significant, $r(285) = .505, p < .001$, indicating a moderate positive relationship between the two measures. Overall, results indicate the Belief of Other as Self (BOS) scale has good internal validity, convergent validity, and a single-factor structure.

M-Scale

Hood's M-Scale is the most commonly used assessment of mystical experience. The M-Scale is a 32-item survey that assesses eight dimensions of mystical experience (all of Stace's dimensions minus paradoxicality) using a five-point scale ranging from -2 to +2. Hood's Mysticism Scale has been found to have high reliability, in that mystical experience scores are similar across a variety of different cultural and religious populations. Factor analyses across studies have also repeatedly indicated three factors, in line with Stace's theory of introvertive and extrovertive experience, along with its interpretation.

Self-Transcendent Experience Indicator

Participants responded to a nominal measure indicating whether they had previously undergone an intense self-transcendent experience, and they also indicated how long ago the experience occurred and how it was occasioned. Time since mystical experience was measured in years and months and then converted to months for analysis. Self-transcendent experiences were defined as "experiences of decreased self-salience (i.e. decreased sense of oneself, focus on

oneself, awareness of oneself, and/or self-importance) AND increased feelings of connectedness, often to the point of being completely united with others, the environment, or God/Buddha/Brahman/Etc. In other words, it's an experience of loss of self and also unity with God, nature, or others.”

Spiritual Practice Assessment

To assess participants' engagement in spiritual practice, respondents completed a two-question survey indicating how often they engaged in spiritual practices before their mystical experience and how often they currently engage in spiritual practices. Each question was measured using a seven-point scale ranging from Never to Very Often.

Patient Health Questionnaire-9 (PHQ-9)

The PHQ-9 is a widely used instrument for screening for depression and has been validated as a severity measure and as a measure of treatment outcome in psychiatric patients (Beard, et al., 2016). It is also a validated and useful tool for recognizing not only major depression but also subthreshold depressive disorder in the general population, and strong associations between PHQ-9 depression severity and convergent variables have been found, namely with the BDI ($r=.73$) and the GHQ-12 ($r=.59$) (Martin et al., 2006). It is measured on a four-point scale assessing frequency of symptoms within the last two weeks, ranging from Not At All to Nearly Every Day.

Riverside Life Satisfaction Scale (RLSS)

The RLSS was developed to improve the Satisfaction With Life Scale by including indirect indicators of life satisfaction. It is a six-item assessment, measured on a seven-point scale ranging from Strongly Disagree to Strongly Agree. The RLSS has evidence supporting its reliability and validity, and it has retained the high internal consistency, test-retest stability, and unidimensionality of the Satisfaction With Life Scale. It has been found to negatively correlate with anxiety and depression as well as general negative affect (Margolis et al., 2019).

For ease of access and replicability, all measures and instructions are included in the appendix.

Analysis

In order to support Belief of Other as Self (BOS) as a mediator in the relationship between mystical experience and mental health outcomes, four conditions need to be met: mystical experience must significantly predict positive mental health outcomes; mystical experience must significantly predict BOS; BOS must significantly predict positive mental health outcomes; and mystical experience must predict positive mental health outcomes less strongly in the model with the mediator compared to without. Hayes (2022) PROCESS software in SPSS version 4.2 beta was used to perform a mediation analysis to test this hypothesis. Mystical experience was measured using participants' average score on the M-Scale. Belief of Other as Self (BOS) was measured using the average score on the BOS measure. Mental health was measured using a mean composite score of the scale-aligned RLSS and PHQ-9.

To substantiate the BOS scale and its value in understanding the relationship between mental health and mystical experience beyond that of Aron's Closest Other item in the Inclusion of Other in the Self, a mediation analysis was conducted to compare the Closest Other item to the full BOS measure as mediators. Lastly, two mediation analyses were conducted using the RLSS and PHQ-9 as independent measures of mental health to determine how the measurement of mental health affects the outcome.

To test whether time elapsed since mystical experience and spiritual practice moderate the relationship between mystical experience and mental health, Hayes (2022) PROCESS software was used to perform separate moderation analyses. In the analysis assessing time since mystical experience, participants who indicated they had never had an intense self-transcendent experience were filtered out, and separate analyses were conducted with time since mystical experience as a continuous variable and as a converted 1-6 scale to mitigate the effects of potentially impactful outliers.

Two exploratory, *a posteriori* analyses were also conducted. To test the possibility that the effect of time depends on spiritual practice, an additional multiple regression analysis was conducted to test for this three-way interaction. Lastly, a mediation analysis was performed to determine whether spiritual practice mediates the relationship between mystical experience and mental health, and a parallel mediation model looked at both Belief of Other as Self and spiritual practice as mediators.

CHAPTER IV

RESULTS & CONCLUDING REMARKS

Results

The study compared average wellness scores between individuals who reported having undergone an intense self-transcendent experience (STE) to those who had not. An independent samples t-test revealed participants who reported undergoing an intense STE had a significantly higher mean mental health score ($M = 3.15$, $SD = 0.55$) compared to those who reported never having an STE ($M = 2.90$, $SD = 0.63$), $t(344) = 3.19$, $p < .001$, Cohen's $d = 0.57$. Additionally, a significant correlation was found between participants' score on the mysticism scale and mental health, $r(345) = .212$, $p < .01$. All relevant correlations can be found in Table 4. Overall, these results suggest the degree of mystical experience is related to mental health, and individuals who have undergone an intense STE have better mental health than those who have not, with a moderate effect size.

Table 5 Correlations of Variables of Interest

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12
1. Closest Other	300	3.94	1.48	—											
2. Ideal Self	302	3.85	1.48	.45**	—										
3. Strangers	292	2.87	1.49	.67**	.43**	—									
4. Nature	300	4.24	1.57	.43**	.45**	.52**	—								
5. God	299	4.75	1.56	.36**	.39**	.39**	.54**	—							
6. BOS Avg	287	3.92	1.15	.77**	.71**	.79**	.79**	.72**	—						
7. RLSS	356	2.85	.66	.27**	.28**	.29**	.17**	.28**	.35**	—					
8. PHQ-9	354	3.34	.61	.19**	.25**	.20**	—	.22**	.27**	.64**	—				
9. Wellness	353	3.09	.58	.25**	.29**	.28**	.15*	.27**	.35**	.91**	.90**	—			
10. M-Scale	347	3.93	.91	.28**	.32**	.39**	.54**	.35**	.50**	.24**	.14**	.21**	—		
11. SP	256	5.51	1.62	—	—	—	—	.17*	—	.28**	.29**	.31**	.17**	—	
12. IC	313	4.91	1.23	.29**	.30**	.39**	.54**	.41**	.51**	.23**	.13*	.20**	.60**	—	—

Note: BOS Avg is the average score of the first five items, which are all on a 1-6 scale. RLSS is the average score of the Riverside Life Satisfaction Scale, which has been scale-aligned on a 1-4 scale with the PHQ-9. PHQ-9 is the average score of the Patient Health Questionnaire-9. Wellness is the average composite score of the RLSS and PHQ-9. M-Scale is the average score of Hood’s Mysticism Scale, which is on a 1-5 scale. SP is the average score of the current engagement in spiritual practice measure, which is on a 1-7 scale. IC is the average score of the Primal World Beliefs – Interconnectedness subscale, which is on a 1-6 scale. * = $p < .05$; ** = $p < .01$

Belief of Other as Self as a Mediator

To test whether Belief of Other as Self (BOS) mediates the relationship between mystical experience and mental health, a mediation analysis was conducted. The sample consisted of 281 participants. There was evidence of heteroscedasticity in the regression model, revealed through White’s Test for Heteroskedasticity, so the heteroskedasticity-consistent standard error estimator HC3 was used, in line with Hayes (2007). Results showed there was a significant effect of mystical experience on mental health, $b = .15, p < .001 (R^2 = .06)$. There was also a significant relationship between mystical experience and Belief of Other as Self, $b = .74, p < .001 (R^2 = .25)$. BOS was a significant predictor of mental health ($b = .12, p < .001$). When entered together, only BOS remained a significant predictor of mental health ($R^2 = .13$). Bootstrapping

methods were used to examine the significance of the indirect effect. The relationship between mystical experience and mental health was mediated by BOS (Effect = .09, 95% CI [.05, .14]). The indirect effect through BOS accounted for 61% of the total relationship between mystical experience and mental health.

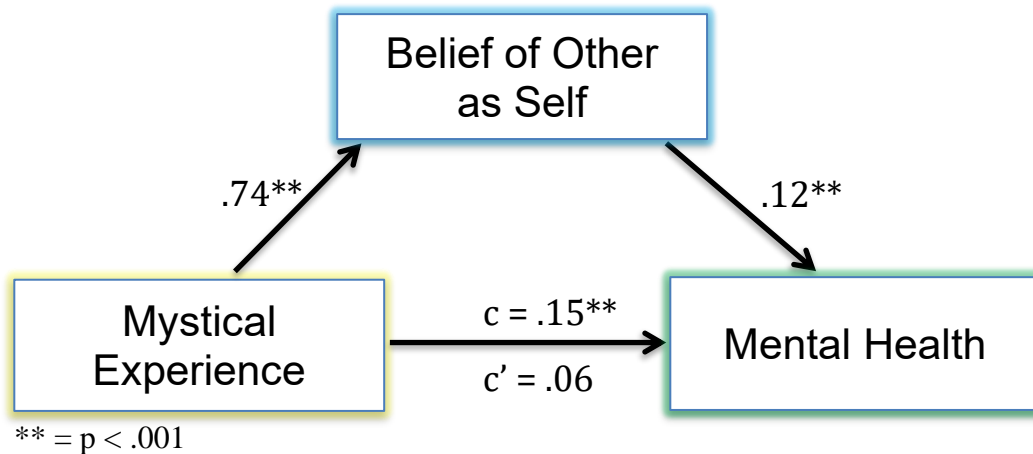


Figure 2 Belief of Other as Self (BOS) Mediating Pathway

To examine whether the full BOS measure is a stronger mediator than the “Closest Other” item from the Inclusion of Other in Self scale, a mediation analysis was conducted assessing only the Closest Other item as a mediator of the relationship between mystical experience and mental health. Analyses revealed there was a significant relationship between mystical experience and inclusion of Closest Other in the self ($b = .53, p < .001 (R^2 = .08)$). Inclusion of Closest Other in the self was a significant predictor of mental health ($b = .06, p < .001$). When entered together, both mystical experience ($b = .11, p < .01$) and inclusion of Closest Other in the self ($b = .06, p < .01$) remained significant predictors of mental health ($R^2 =$

.09). The relationship between mystical experience and mental health was mediated by inclusion of Closest Other in the self (Effect = .03, 95% CI [.01, .06]). The indirect effect through the inclusion of Closest Other in the self accounted for 23% of the total relationship between mystical experience and mental health.

Comparing the two analyses, it is evident the full BOS scale is a better measure for explaining the relationship between mystical experience and mental health than the IOS's Closest Other item alone. 61% of the total relationship between mystical experience and mental health can be explained by BOS, whereas only 23% can be explained by the Closest Other item alone.

Lastly, when assessing mental health as the Riverside Life Satisfaction Scale (RLSS) and the Patient Health Questionnaire 9 (PHQ-9) independently instead of as the average composite score, Belief of Other as Self (BOS) fully mediated the relationship between mystical experience and mental health in both analyses, meaning the relationship between mystical experience and mental health was no longer significant after accounting for BOS. The indirect effect through the BOS was stronger when using the PHQ-9 (66%) as the mental health measure compared to the RLSS (59%). To conclude, BOS mediates the relationship between mystical experience and mental health regardless of which mental health measure was used for analysis.

Table 6 Descriptive Statistics for Mediation Variables

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	Variance	Skewness		Kurtosis	
					Statistic	Std. Error	Statistic	Std. Error
1. Mystical Experience	347	3.93	.91	.82	-.80	.13	-.32	.26
2. Belief of Other as Self	287	3.92	1.15	1.32	-.17	.14	-.45	.29
3. Mental Health	353	3.10	.58	.33	-1.00	.13	-.53	.26

Time Since Self-Transcendent Experience as a Moderator

To test whether the time elapsed since one’s last self-transcendent experience moderates the relationship between mystical experience and mental health outcomes, a regression analysis was conducted using the PROCESS (Model 1) procedure in SPSS. Results showed the overall model was significant ($R^2 = 0.06$, $F(3,244) = 5.26$, $p < 0.01$), and mystical experience was a significant predictor of mental health ($b = 0.18$, $SE = 0.06$, $t(244) = 3.01$, $p < 0.01$). In addition, the interaction between mystical experience and time since experience was significant ($b = -0.0013$, $SE = 0.00$, $t(244) = -2.70$, $p < 0.01$). The conditional effects of mystical experience on mental health were examined at three different values of time since experience (-49.39, 0, and 95.14). The effect of mystical experience on mental health was significant at two levels of time since experience, with the effect being strongest at the lowest level ($\beta = .241$, $p < .001$) and weakest at the highest ($\beta = .051$, $p = .47$), suggesting the effect of mystical experience of mental health is stronger shortly after the mystical experience but not significant after a certain amount of time. In this analysis, the amount of time since one's last mystical experience moderated the relationship between mystical experience and mental health. However, there were 38 extreme

outliers, representing participants who had a mystical experience >10 years ago, so the results are vulnerable to being skewed.

Testing the hypothesis with time since mystical experience as a 1-6 ordinal scale, results indicated the overall model was significant ($R^2 = 0.05$, $F(3,244) = 3.87$, $p = 0.01$), and mystical experience was a significant predictor of mental health ($b = 0.17$, $SE = 0.06$, $t(244) = 2.82$, $p < 0.01$). However, the interaction between mystical experience and time since experience was not significant ($b = -0.04$, $SE = 0.03$, $t(244) = -1.53$, $p = 0.13$). In this analysis, the amount of time since one's last mystical experience did not moderate the relationship between mystical experience and mental health.

Given the results of both of these analyses, there is inconclusive evidence to support the hypothesis that time since mystical experience moderates the relationship between mystical experience and mental health. To dig deeper into the effect time has on the relationship, an ANOVA was conducted to determine if there were mean differences in mental health in relation to time since experience, as measured by a 1-6 scale. Results revealed no significant mental health differences across times, indicating time since mystical experience doesn't play a role in the relationship between mystical experience and mental health.

Spiritual Practice as a Moderator

Moderation analyses were conducted to examine whether spiritual practice moderates the relationship between mystical experience and mental health. The sample size was 248.

Examining current engagement in spiritual practices as a moderator, results indicate that both mystical experience ($B = .12$, $SE = .06$, $t(244) = 2.26$, $p = .02$) and current spiritual practice ($B =$

.09, $SE = .02$, $t(244) = 4.33$, $p < .001$) are significant predictors of mental health. However, the interaction was not significant ($B = -.02$, $SE = .03$, $t(244) = -.61$, $p = .54$), indicating that engagement in spiritual practices does not moderate the relationship between mystical experience and positive mental health outcomes. Examining engagement in spiritual practices prior to a participant's STE, only mystical experience ($B = .18$, $SE = .06$, $t(244) = 3.14$, $p < .01$) was a significant predictor of mental health. Finally, assessing the average of both prior and current engagement in spiritual practice, both mystical experience ($B = .15$, $SE = .06$, $t(244) = 2.63$, $p < .01$) and spiritual practice ($B = .07$, $SE = .02$, $t(244) = 3.15$, $p < .01$) were significant predictors of mental health. However, the interaction was not significant ($B = -.05$, $SE = .03$, $t(244) = -1.49$, $p = .14$). The results of these three analyses suggest spiritual practice does not moderate the relationship between mystical experience and mental health, although there is evidence that current spiritual practice is positively related to mental health among those who have undergone a mystical experience.

To test the possibility that spiritual practice influences the effect time has on the relationship between mystical experience and mental health, an additional multiple regression analysis was conducted to test for this three-way interaction. Significant interactions to support this relationship were not found.

Additionally, an exploratory analysis was performed to determine if spiritual practice mediates the relationship between mystical experience and mental health. Analysis revealed there was a significant effect of mystical experience on mental health, $b = .17$, $p < .01$ ($R^2 = .04$). There was also a significant relationship between mystical experience and spiritual practice, $b = .44$, $p < .01$ ($R^2 = .03$). Spiritual practice was a significant predictor of mental health, $b = .09$, $p <$

.001. When entered together, both mystical experience and spiritual practice remained significant predictors of mental health ($R^2 = .11$). The relationship between mystical experience and mental health was mediated by spiritual practice, Effect = .04, 95% CI [.01, .09]. The indirect effect through spiritual practice accounted for 24% of the total relationship between mystical experience and mental health.

Given these findings, one additional mediation analysis was performed to test BOS and spiritual practice as parallel mediators. In a sample of 204 participants, analysis revealed there was a significant effect of mystical experience on mental health, $b = .17$, $p < .01$, ($R^2 = .04$). There was no significant relationship between mystical experience and spiritual practice, $b = .001$, $p = 1$, ($R^2 = 0$), but there was a significant relationship between mystical experience and Belief of Other as Self (BOS), $b = .71$, $p < .001$, ($R^2 = .17$). Spiritual practice was not a significant predictor of mental health, $b = .02$, $p = .25$, while BOS was, $b = .15$, $p < .001$. When entered together, only BOS remained a significant predictor of mental health ($R^2 = .13$). The relationship between mystical experience and mental health was mediated only by BOS, Effect = .11, 95% CI [.05, .18]. The indirect effect through BOS accounted for 64% of the total relationship between mystical experience and mental health, after accounting for spiritual practice.

Discussion

The present study examined the psychological mechanisms underlying the relationship between mystical experience and mental health, with a primary focus on the role of Belief of Other as Self (BOS) as a mediator. Time since experience and spiritual practice were also examined as potential moderators. The findings revealed that individuals who reported having

previously undergone a mystical experience had significantly higher mental health scores compared to those who indicated they had never undergone such an experience. This, along with the previously discussed research on mystical experience, suggests mystical experiences are likely related to better mental health.

To explain this relationship, the present study examined the mediating role of Belief of Other as Self (BOS). Belief of Other as Self was theorized to occur after mystical experiences because, in a mystical experience, there is a dissolution of one's sense of self which is accompanied by a unity of all things. In this state, the self doesn't exist apart from anything else. In other words, all things are self / there is no self. This brief experience is likely to alter an individual's fundamental beliefs about the self to include more things as self which were previously viewed as other. This alteration of self-concept was theorized to be related to better mental health through a reduction of the negative effects of excessive personal self-focus.

Aron's Inclusion of Other in the Self (IOS) was the most appropriate measure to assess Belief of Other as Self. The IOS was designed to measure interpersonal closeness, which Aron (1997) described as "an interconnectedness of self and other", in which interconnectedness could be understood as either "behaving close" or "feeling close", the latter of which is similar to the concept of intimacy. The difference between the IOS and the BOS can be found in their ontological assumptions. This study conceptualized belief of other as self not necessarily as interconnectedness or closeness, but rather as self and other being ontological equivalents. The distinction is that things can be seen as interconnected but ontologically distinct, as illustrated by the computer and office chair. The modern office chair is made for the computer, and the computer to a lesser degree needs the office chair, so we can say they are interconnected, but the

office chair isn't comprised of the same bits and pieces as the computer. Rather than assessing interconnectedness as "behaving close" or "feeling close", the BOS is assessing something akin to "understanding close". This difference is also illustrated semantically in the term Belief of Other *as* Self, as opposed to Inclusion of Other *in* the Self.

The BOS also differs from the IOS in that it assesses Closest Other along with four additional Others. These additional others were included to assess one's sense of self in relation to the spiritual, natural, social, and psychological domains an individual is part of, and the IOS was also modified to include complete overlap between self and other.

Overall, Aron's IOS was an excellent tool to modify in order to assess the Belief of Other as Self. There was a lot of conceptual overlap between our constructs, but ontological differences and the need to assess various others warranted the development of the BOS scale.

The BOS scale was shown to have good reliability, convergent validity, and unidimensionality, suggesting it is a good measure of the intended construct. As the primary purpose of this study was to test a hypothesis rather than validate a scale, future studies should be performed to further validate or improve the BOS. Namely, additional measures to establish construct validity should be assessed, and face validity could be improved by more clearly conveying in the instructions that the BOS is assessing other as ontologically equivalent to self. Nonetheless, the BOS scale showed to be an effective measure in its current form.

The findings from the mediation analysis indicated that BOS mediates the relationship between mystical experience and mental health, where 61% of the total relationship between mystical experience and mental health could be accounted for by Belief of Other as Self. This

finding points to mystical experience promoting a more inclusive sense of self, which in turn contributes to positive mental health outcomes. However, although there is theoretical evidence that mystical experience would lead to BOS, and there is no evidence to support the directionality of the relationship being reversed, given that this study used a cross-sectional design, we must be cautious about making causal claims regarding the nature of the relationship between the variables. Future studies should implement experimental designs to determine the direction of the relationship.

Furthermore, the study explored the moderating effects of time since mystical experience on the relationship between mystical experience and mental health outcomes. When assessing time since mystical experience as a continuous variable, the interaction between time and mystical experience was very small but significant, and conditional effects revealed time weakens the strength of the relationship between mystical experience and mental health to the point of non-significance. However, there were many outliers in the time since mystical experience assessment, which could potentially skew the results. Assessing time since mystical experience on a 1-6 scale, no significant interaction between mystical experience and time was found. Given the lack of consensus between analyses, it is more appropriate to conclude the study failed to reject the null hypothesis, meaning time did not moderate the relationship between mystical experience and mental health. To support this conclusion, an ANOVA found no significant differences in mental health when time was measured as a 1-6 scale.

It is unclear why time since mystical experience did not moderate the relationship between mystical experience and mental health. Logically, it would make sense that the effects of a mystical experience would eventually wear off, as do the effects of most experiences. When

you go to the amusement park, you might be happy the day after or even the week after, but eventually you return to baseline. Why would a mystical experience be different? Looking back at the research on mystical experience, it was found mystical experiences are often rated as one of the top 5 most meaningful events in a person's life, alongside other events like marriage, child-birth, and the death of a loved one (Griffiths et al., 2006). The significant events that mark a person's life are often transformative, causing fundamental shifts in one's beliefs, values, and behaviors. Perhaps mystical experiences are no different. The transformative power of mystical experiences has been supported empirically (Forstmann, et al., 2020; Miller & C'de Baca, 2001), and the findings of the present study suggest the possibility that one's fundamental belief of self changes after a mystical experience, and that this change in self-concept leads to better mental health. From this line of reasoning, it is plausible that mystical experiences fundamentally and irreversibly change a person, so that the amount of time elapsed since one's mystical experience doesn't significantly affect the relationship between mystical experience and mental health. Future studies should continue to explore the relationship between these variables.

The study also examined the moderating effect of spiritual practice on the relationship between mystical experience and mental health outcomes. The results did not support the hypothesis that spiritual practice moderates this relationship. This finding indicates that the positive effects of self-transcendent experiences on mental health outcomes may not depend on spiritual practice. However, it was found that spiritual practice is related to better mental health among those who have had a mystical experience. Interestingly, an exploratory analysis also revealed that spiritual practice partially mediates the relationship between mystical experience and mental health, meaning both the direct effect of mystical experience and the indirect effect through spiritual practice led to better mental health. Longitudinal studies should assess the

directionality of the relationship, but these findings point to the possibility that a mystical experience leads to increases in spiritual practice, which then leads to better mental health. When assessing BOS and spiritual practice as parallel mediators of the relationship between mystical experience and mental health, only BOS was a significant predictor of mental health and mystical experience was not significantly related to spiritual practice. This suggests BOS is a powerful mediator in explaining the relationship between mystical experience and mental health.

In summary, the present study provides evidence that mystical experiences are related to better mental health outcomes, which can be explained, to a considerable extent, by Belief of Other as Self (BOS). The dissolution of self in a mystical experience may lead to the belief that self and other are fundamentally the same, which then reduces the negative mental health effects that stem from excessive personal self-focus. However, longitudinal studies need to be conducted to investigate the directionality of the relationship to support this claim. Regardless of directionality, this discovery has significant implications for the field of psychology, namely within the clinical domain, as it suggests expanding one's beliefs about the nature of the self may serve as a powerful tool for promoting mental health and well-being.

Further, given that psychedelic-assisted therapy is becoming more widespread, and psychedelics have been found to reliably occasion mystical experiences, the need for better understanding of the mystical experience is crucial. To date, there are very few studies that explain the psychological mechanisms underpinning the therapeutic benefits of mystical experience. Some broad factors such as increased psychological flexibility and reduced death anxiety have been found as mediators of the therapeutic effects of psychedelics, and meaning-making has been proposed as an additional mediator (Davis et al., 2020; Hartogsohn, 2018;

Moreton et al., 2023). Perhaps most closely aligned with the present study is a commentary by Carhart-Harris (2018), in which he proposes connectedness is a key factor in understanding the therapeutic benefits of psychedelics. In line with Carhart-Harris' commentary, the BOS assesses the three aspects of connectedness: self connectedness in the overlap of Self / Ideal Self; social connectedness in the overlap of Self / Closest Other and Self / Strangers; and world connectedness in the overlap of Self / Nature and Self / God. The current study went a few steps further than Carhart-Harris' commentary by operationalizing a definition of connectedness, albeit in a very restricted sense as a belief in ontological connectedness, and developing a scale to test this connectedness as a mediator. The results support connectedness, in the form of the BOS, as a mediator of the relationship between mystical experience and mental health.

Limitations

Despite the significance of the current findings, some limitations exist. As previously mentioned, the BOS scale was not the focal point of the study, i.e., it was primarily created to test a specific hypothesis. Only one measure was used to assess convergent validity, and none were used to assess discriminant validity. This is an important next step that needs to be taken to establish the overall validity of the BOS. This is especially important given that the BOS was developed as a modified version of the IOS, which was designed to measure interpersonal connectedness. The BOS is claiming to measure an ontological belief of connectedness, which shares overlap but is not limited to interconnectedness as “behaving close” or “feeling close”. The importance of ontological connectedness could be assessed by comparing relationships among variables using the original wording and design of the IOS with additional items to the BOS. Perhaps we would find the nuance in type of connectedness would not make a difference,

although I would still argue the IOS is implicitly assessing ontological connectedness by measuring overlapping circles as opposed to two circles at various distances from each other.

More importantly is the limitation of using cross-sectional data. Mediation analysis assumes a temporal ordering of variables in a causal chain, and the results of a mediation analysis using cross-sectional data are correlational in nature, which can not be used to establish causality. So, the findings of the current study show that BOS is related to mystical experience and mental health, but experimental studies are needed in order to determine if mystical experience actually leads to BOS, which then leads to better mental health.

Conclusion

The discovery that the relationship between mystical experience and mental health outcomes is mediated by Belief of Other as Self highlights the importance of addressing an individual's ontological sense of self within a therapeutic context. Within psychedelic-assisted therapy, clinicians can utilize these findings to better understand and prepare patients for the self-dissolution and uniting aspects of the psychedelic experience, and they can also be used to help patients integrate their experience into a more inclusive sense of self. By targeting an individual's fundamental beliefs of self within a clinical context, clinicians may be able to reduce the negative effects of excessive personal self-focus, treat various psychological disorders, and improve one's overall quality of life.

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APPENDIX A
IRB APPROVAL LETTER

Institutional Review Board

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TO: Christian Ishak
Dr. Ralph Hood **IRB # 23-004**

FROM: David Deardorff, Interim Director of Research Integrity
Dr. Susan Davidson, IRB Committee Chair

DATE: 1/13/2023

SUBJECT: IRB #23-004: Who's Being Transcended? Mystical Experience, Self-Concept, and Mental Health

Thank you for submitting your application for exemption to The University of Tennessee at Chattanooga Institutional Review Board. Your proposal was evaluated in light of the federal regulations that govern the protection of human subjects.

Specifically, 45 CFR 46.104(d) identifies studies that are exempt from IRB oversight. The UTC IRB Chairperson or his/her designee has determined that your proposed project falls within the category described in the following subsection of this policy:

46.104(d)(2)(i): Research only includes educational tests, surveys, interviews, public observation and recorded information cannot readily identify the subject (directly or indirectly/linked)

Even though your project is exempt from further IRB review, the research must be conducted according to the proposal submitted to the UTC IRB. If changes to the approved protocol occur, a revised protocol must be reviewed and approved by the IRB before implementation. For any proposed changes in your research protocol, please submit an Application for Changes, Annual Review, or Project Termination/Completion form to the UTC IRB. Please be aware that changes to the research protocol may prevent the research from qualifying for exempt review and require submission of a new IRB application or other materials to the UTC IRB.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite our best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the UTC IRB as soon as

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possible. Once notified, we will ask for a complete explanation of the event and your response. Other actions also may be required depending on the nature of the event.

Please refer to the protocol number denoted above in all communication or correspondence related to your application and this approval.

For additional information, please consult our web page <http://www.utc.edu/irb> or email instrb@utc.edu.

Best wishes for a successful research project.

APPENDIX B
SELF-TRANSCENDENT EXPERIENCE INDICATOR

Self-Transcendent Experience Indicator

Participants were given the following prompt: “The following question deals with intense self-transcendent experiences, also commonly referred to as mystical or religious experiences.

Self-transcendent experiences are experiences of **decreased** self-salience (i.e. decreased sense of oneself, focus on oneself, awareness of oneself, and/or self-importance) AND **increased** feelings of connectedness, often to the point of being completely united with others, the environment, or God/Buddha/Brahman/Etc. In other words, it's an experience of loss of self and also unity with God, nature, or others.” Participants were then asked to answer Yes or No to the following question: “Have you ever had an intense self-transcendent experience?”

If participants answered Yes, they were then instructed to answer the following questions.

1. Approximately how long ago was your last self-transcendent experience? If less than 1 month ago, respond with "0" to both Years and Months. If it has been a long time since your last self-transcendent experience and you don't exactly remember when it occurred, please provide your best guess.

Years:

Months (0-11):

2. What caused your self-transcendent experience?

Substance use (cannabis, psilocybin, LSD, MDMA, etc.)

Spiritual activity (meditation, yoga, prayer, worship, reading sacred texts, etc)

Spending time in nature

The self-transcendent experience occurred spontaneously or had no obvious cause

Other

APPENDIX C
HOOD'S M-SCALE

Hood's M-Scale

Rating

+2 This description is definitely true of my own experience or experiences.

+1 This description is probably true of my own experience or experiences.

0 I cannot decide.

-1 This description is probably not true of my own experience or experiences.

-2 This description is definitely not true of my own experience or experiences.

Instructions: Please mark each item trying to avoid if at all possible marking any item with a 0. In responding to each item, please understand that the items may be considered as applying to one experience or as applying to several different experiences.

(1) I have had an experience which was both timeless and spaceless.

(2) I have never had an experience which was incapable of being expressed in words.

(3) I have had an experience in which something greater than myself seemed to absorb me.

(4) I have had an experience in which everything seemed to disappear from my mind until I was conscious only of a void.

(5) I have experienced profound joy.

(6) I have never had an experience in which I felt myself to be absorbed as one with all things.

(7) I have never experienced a perfectly peaceful state.

(8) I have never had an experience in which I felt as if all things were alive.

(9) I have never had an experience which seemed holy to me.

(10) I have never had an experience in which all things seemed to be aware.

(11) I have had an experience in which I had no sense of time or space.

(12) I have had an experience in which I realized the oneness of myself with all things.

(13) I have had an experience in which a new view of reality was revealed to me.

- (14) I have never experienced anything to be divine.
- (15) I have never had an experience in which time and space were non-existent.
- (16) I have never experienced anything that I could call ultimate reality.
- (17) I have had an experience in which ultimate reality was revealed to me.
- (18) I have had an experience in which I felt that all was perfection at the time.
- (19) I have had an experience in which I felt everything in the world to be part of the same whole.
- (20) I have had an experience which I knew to be sacred.
- (21) I have never had an experience which I was unable to express adequately through language.
- (22) I have had an experience which left me with a feeling of awe.
- (23) I have had an experience that is impossible to communicate.
- (24) I have never had an experience in which my own self seemed to merge into something greater.
- (25) I have never had an experience which left me with a feeling of wonder.
- (26) I have never had an experience in which deeper aspects of reality were revealed to me.
- (27) I have never had an experience in which time, place, and distance were meaningless.
- (28) I have never had an experience in which I became aware of a unity to all things.
- (29) I have had an experience in which all things seemed to be conscious.
- (30) I have never had an experience in which all things seemed to be unified into a single whole.
- (31) I have had an experience in which I felt that nothing is ever really dead.
- (32) I have had an experience that cannot be expressed in words.

APPENDIX D
SPIRITUAL PRACTICE ASSESSMENT

Spiritual Practice Assessment

Instructions: Please respond to the following question about changes in your routine after undergoing a mystical / self-transcendent experience. Although your mood or outlook on life may have changed after your mystical experience, this survey is specifically assessing your engagement in spiritual practices. Spiritual practices include prayer, meditation, reading spiritual texts, mindfulness, yoga, religious service attendance, worship, creative activities, and other activities intended to enhance your relationship with the Divine.

(Note: If you haven't had a mystical or self-transcendent experience, please select 9.)

1 - Never, 2 - Rarely, 3 - Occasionally, 4 - Sometimes, 5 - Moderately, 6 - Often, 7 - Very Often

1. How often did you engage in spiritual practices before your mystical experience?
2. How often do you currently engage in spiritual practices?

APPENDIX E

PRIMAL WORLD BELIEFS – INTERCONNECTEDNESS SUBSCALE

Primal World Beliefs - Interconnectedness

Instructions: Below are very general statements about the world—not the world we wish we lived in, but the actual world as it is now. Please share your sense of agreement or disagreement. When in doubt, go with what initially feels true of the real world. There are no wrong answers. There's no need to overthink.

Strongly agree

Agree

Slightly agree

Slightly disagree

Disagree

Strongly disagree

1. Every single thing is connected to everything else.
2. Most things are basically unconnected and independent from each other.
3. Though things can appear separate and independent, they really aren't. Instead, all is one.
4. The world is a place where everything is completely interconnected.
5. I am connected to everything and everyone else.

APPENDIX F
PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)

PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)

Instructions: **Over the last 2 weeks**, how often have you been bothered by any of the following problems?

Not at all Several days More than half the days Nearly every day

1. Little interest or pleasure in doing things
2. Feeling down, depressed, or hopeless
3. Trouble falling or staying asleep, or sleeping too much
4. Feeling tired or having little energy
5. Poor appetite or overeating
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down
7. Trouble concentrating on things, such as reading the newspaper or watching television
8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual
9. Thoughts that you would be better off dead or of hurting yourself in some way

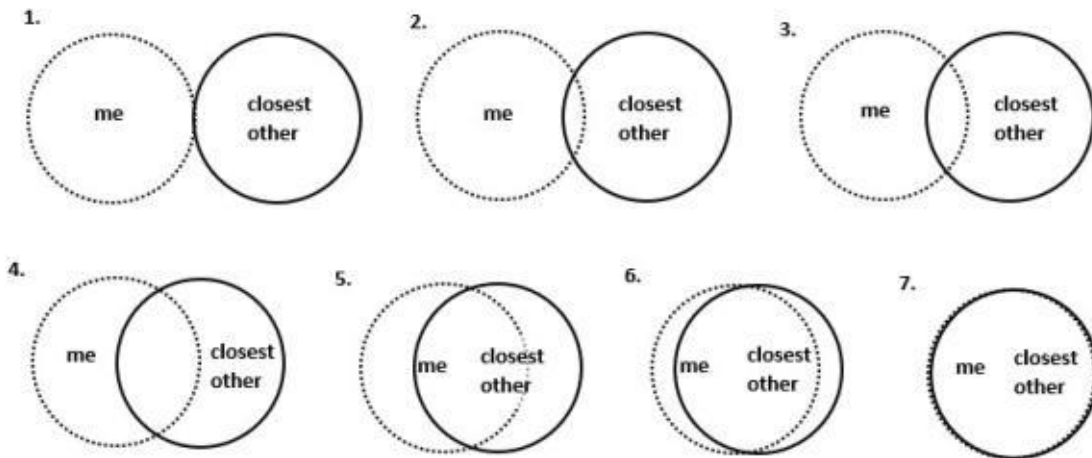
APPENDIX G
BELIEF OF OTHER AS SELF SCALE

Belief of Other as Self (BOS)

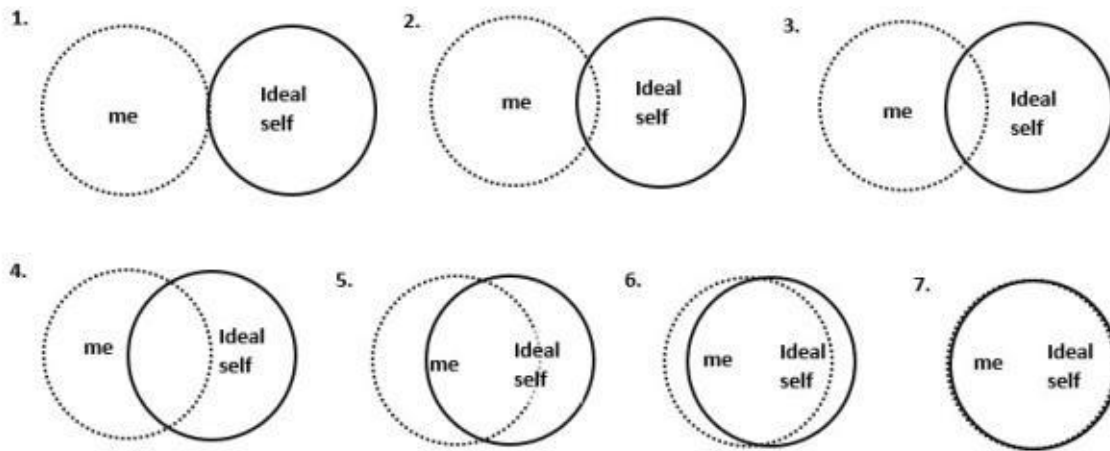
Directions: The following questions are assessing the degree to which you include certain groups as part of yourself.

Note: This measure isn't assessing your fondness for the other group. You can have strong positive feelings about a group while also believing you are essentially separate and independent of the group. Likewise, you can have negative or neutral feelings about a group but still feel the group is part of yourself fundamentally, psychologically, socially, etc.

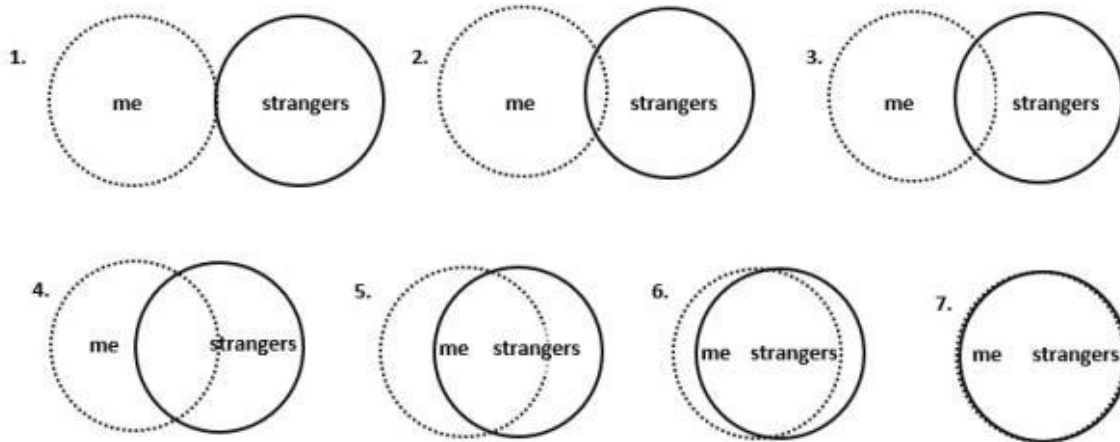
Which picture best describes your relationship with the following groups?

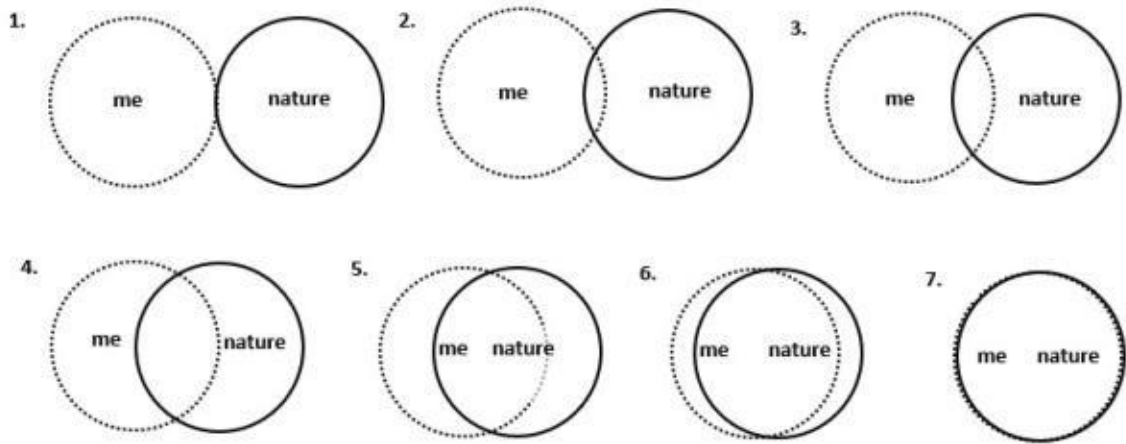


Note: "Closest other" refers to the person you feel closest to in your life.

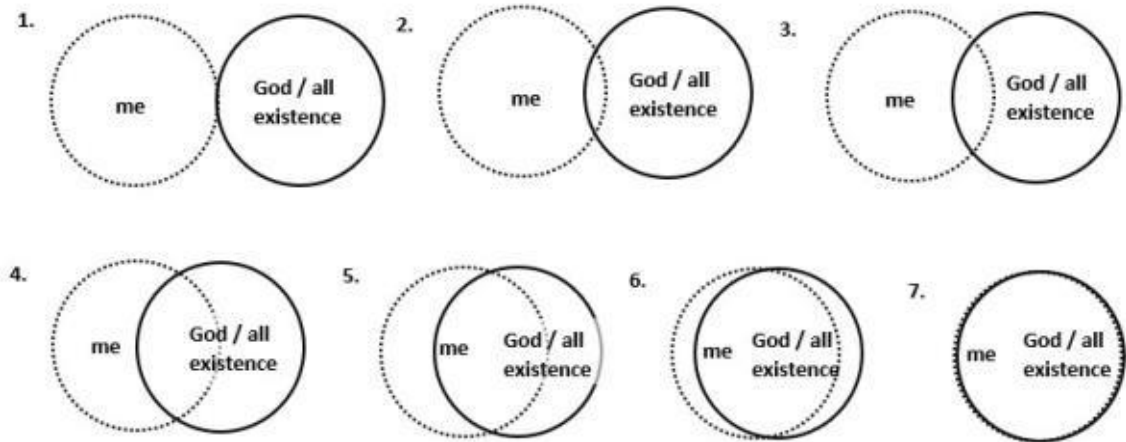


Note: Your ideal self is the version of yourself that you want to be.





Note: This is referring to the natural environment (i.e. trees, plants, wildlife, etc.)



Note: If you believe in God/Brahman/Allah/etc., this question is referring to that. If you aren't religious, this question is referring to the universe and everything that exists.

APPENDIX H
RIVERSIDE LIFE SATISFACTION SCALE (RLSS)

Riverside Life Satisfaction Scale

Instructions: Please rate your agreement with each of the statements below. Use the 7-point scale provided.

- 7 - Strongly agree
- 6 - Moderately Agree
- 5 - Slightly agree
- 4 - Neither agree nor disagree
- 3 - Slightly disagree
- 2 – Moderately Disagree
- 1 - Strongly disagree

1. I like how my life is going.
2. If I could live my life over, I would change many things.
3. I am content with my life.
4. Those around me seem to be living better lives than my own.
5. I am satisfied with where I am in life right now.
6. I want to change the path my life is on.

VITA

Christian Ishak was born in Portland, Tennessee to George and Lora Ishak. He has one younger brother, Brandon. Christian earned his Bachelor of Science in Business Administration – Management at the University of Florida in Gainesville, Florida in 2017. He then went on to obtain a Teaching English as a Foreign Language certificate from Florida State University and proceeded to teach English as a Second Language in South Korea for three years. While teaching in Korea, Christian earned an online Bachelor of Arts in Psychology from the University of Florida, and he also met his wife, Harin Mun Ishak. In 2021, Christian relocated to Chattanooga, Tennessee to investigate mystical experiences under Dr. Ralph Hood within the University of Tennessee at Chattanooga’s Master of Science in Psychological Sciences program. After graduating, Christian plans to pursue a PhD in Clinical Psychology while continuing to research the psychological outcomes of various religious beliefs and experiences.