

# The Role of Connectedness in Christian Spiritual Formation

T Ryan Byerly

## Abstract

*This paper explains what experiences of connectedness are and what distinguishes them from neighboring experiences such as awe, self-diminishment, mystical experiences, and ego dissolution. It shows that connectedness experiences are uniquely transformative in that they promote pleasant affect, reduce stress and depression, prompt people to think and act in ways that are kinder to other people and their environment, and they promote greater felt meaning, life satisfaction, and understanding. It then argues that God and leaders in Christian spiritual formation can make important contributions to helping people experience connectedness. It proposes eight concrete implications of research on connectedness for Christian spiritual formation leaders.*

Imagine there was an experience people could have which uniquely felt pleasant to them, reduced their levels of stress and depression, prompted them to think and act in ways that are kinder to other people and their environments, increased their experience of meaning and satisfaction in life, and helped them better understand important truths. It sounds like a magic elixir. But I will argue that it is real, and that God and leaders in Christian spiritual formation can make important contributions to helping people experience it. The experience I have in mind is one of feeling connected to a large whole. The aim of this paper is to demonstrate what cutting edge research has to say about the nature, value, and cultivation of connectedness experiences, and to propose implications of this research for leaders in Christian spiritual formation.

Section 1 offers an explanatory account of what connectedness experiences are and differentiates them from several closely related experiences, including awe, self-diminishment, mystical experiences, and ego dissolution. Section 2 surveys support for the uniquely transformative value of connectedness experiences, examining how connectedness relates to the outcomes identified in the previous paragraph. Section 3 addresses some causes of connectedness experiences, including situational, personality, and chemical causes. Section 4 identifies ways that God and the Christian tradition can help people to experience connectedness. And section 5 proposes 8 concrete implications of these findings for leaders in Christian spiritual formation.

## 1. What is Connectedness?

Let me start with some illustrative examples of connectedness experiences narrated by the individuals who had them. First, an example from Malwida von Meysenburg, relayed in William James's *The Varieties of Religious Experience* (1902: lecture XVI):

“I was alone upon the seashore as . . . I was impelled to kneel down, this time before the illimitable ocean, symbol of the Infinite. I felt that I prayed as I had never prayed before, and knew now what prayer really is: to return from the solitude of

individuation into the consciousness of unity with all that is, to kneel down as one that passes away, and to rise up as one imperishable. Earth, heaven, and sea resounded as in one vast world-encircling harmony. It was as if the chorus of all the great who had ever lived were about me. I felt myself one with them...”

A second example, from contemporary atheist philosopher Sam Harris (2015: 81):

“As I gazed at the surrounding hills, a feeling of peace came over me. It soon grew to a blissful stillness that silenced my thoughts. In an instant, the sense of being a separate self—an ‘I’ or a ‘me’ – vanished. Everything was as it had been . . . but I no longer felt separate from the scene, peering out at the world from behind my eyes. Only the world remained.”

Finally, an example from a cancer patient with heightened anxiety who participated in psilocybin-assisted psychotherapy. They described their psilocybin-induced experience as involving “a greater understanding of global connectedness . . . It just opens you up and it connects you.” They said, “everything is connected—you know, it’s not people—it’s animals, it’s trees—everything is interwoven, and that’s a big relief. It’s a big comfort.” (Belser et al, 2017: 369)

Examples of experiences like these could be multiplied many times over, and under various guises they have received systematic attention from researchers for over a century, with interest in them going back much further. I suggest that one unique and important component involved in experiences like these is an experience of connectedness. By an experience of connectedness, I mean an experience in which an individual feels and perceives themselves to be somehow connected to a wide whole. In the remainder of this section, I will unpack this account of the nature of connectedness experiences in more detail, explain how connectedness experiences differ from other features that are associated with experiences like those just described, and discuss how measurement instruments for empirical research have begun to focus more narrowly on these experiences, distinguishing them from related ones with which they have sometimes been confused.

First, it should be emphasized that connectedness experiences are experiences. They are state-like, episodic, occurrent events. People may be able to cultivate dispositional tendencies to experience connectedness regularly—a topic I am quite interested in—but my focus here is on the experiences that such a person would tend to have, rather than on their tendency to have those. While it is an interesting question whether there can be unconscious experiences of connectedness, my focus here is on conscious connectedness experiences—experiences of connectedness that a person is aware of, though they might not be aware of them *as* experiences of connectedness. In this way, connectedness experiences are one example of an altered state of consciousness (Studerus et al, 2010).

Second, connectedness experiences involve perceptions—ways of seeing or representing things. In this way, they include a cognitive element. Empirical research has found that when people experience connectedness and they are asked to represent their social networks pictorially, they tend to draw either more or more intimate connections within these networks (Bai et al., 2017). Experiencing connectedness involves thinking about oneself as somehow connected to a wide whole.

Third, there is something it feels like to experience connectedness. While experiencing connectedness involves thinking about oneself in a certain way, thoughts alone do not suffice for experiencing connectedness. Feeling connected to a wide whole involves a distinctive phenomenology, one which people often claim is difficult to express in words but may try to convey through language explicitly referencing connectedness or unity or through metaphors, as in the above examples.

Fourth, connectedness experiences involve feeling somehow, someway connected to a wide whole. “Connected” here does not just mean “related”, as not just any relationship to a wide whole can support a connectedness experience. We can start to get a grip on what feeling connected might involve by contrasting it with feeling disconnected (cf. Carhart-Harris et al., 2018). Whereas experiences of disconnection may involve perceptions of difference, distinctness, opposition, disintegration, discord, or independence, experiences of connectedness may involve perceptions of similarity, sameness, concord, integration, harmony, or interdependence. These are representative examples of the ways a person may perceive themselves to be related to a wide whole when they feel connectedness. Notably, experiences of connectedness can sometimes involve perceptions of some kinds of disconnection, as long as connection remains the dominant theme. For example, a person may perceive themselves as different and distinct from a wide whole and yet all-the-more interdependent with that wide whole, thereby feeling connected to it.

Fifth, the whole a person feels connected to is wide. The whole needs to be large enough that by feeling connected to it a person gains a sense of where they fit into the larger scheme of things. The whole should be one that can be perceived as somehow vast in relation to the self. It might be, as in the examples above, the world or all people or everything, or it might be something more local, like a political or religious community. For this reason, experiences in which a person feels closely connected to another individual human person, such as when they feel in tune with their spouse or feel a relational bond with a friend they have not seen for a long time or feel in touch with their own emotions (Yaden et al, 2017; Watts et al, 2022), are not examples of feeling connected in the sense in view here. That is not to denigrate the latter experiences or to imply that they are not appropriately described using the language of “connectedness”, but it is to suggest that these kinds of experiences are sufficiently distinct as to deserve separate research attention.

Finally, the wide thing a person feels connected to is some kind of whole. This needn’t be understood in any metaphysically loaded way, where the whole is conceived of as something additional beyond the components that make it up, although that can occur. What is important is that the wide thing itself be perceived as united or connected, with the self somehow included in this union.

Understood in this way, the experience of connectedness can be conceptually and empirically distinguished from many closely associated phenomena that frequently accompany the kinds of experiences with which we began this section. I will give several examples.

First, connectedness is distinct from awe. As research has advanced on awe, researchers have come to view awe as a multifaceted emotion involving several distinguishable components: a perception of something vast, a diminished sense of self, a need to alter one’s cognitive structures to accommodate one’s experience, a feeling of connection to a wide whole, altered senses of time or space, and perceptions of characteristic bodily changes such as widened

eyes or a dropped jaw (Yaden et al, 2019). While it is not exactly clear how researchers understand these components to be related to awe, one thing that is clear is that as they understand it awe is typically not comprised merely of connectedness experiences, although connectedness experiences may frequently be one component of awe experiences. It is an interesting question whether awe can ever occur without connectedness. Perhaps the most likely case in which this may occur is in the case of threat-based awe, where one is awed for example by the destructive and threatening power of something dangerous, like a tornado, as one may feel disconnected rather than connected in such a case (Chaudhury et al, 2022). Awe can be distinguished from connectedness, then, in that it can be partially if not fully constituted by features other than connectedness.

Connectedness also differs from the other hypothesized facets of awe. Not only is it measurably distinct, but it is conceptually distinct from these. While experiencing connectedness typically involves perceiving something vast in relation to the self, the latter is not sufficient for connectedness, as a person may perceive a vast thing as threatening, alienating, or opposing themselves, leading to feelings of disconnection rather than connection. The awe literature has sometimes conflated connectedness with self-diminishment (Piff et al, 2015). Yet, while a connectedness experience may involve a diminished sense of self in that one's attention is directed toward something large beyond the self, experiences of self-diminishment can occur within experiences of disconnection as well, for example when the self is perceived as powerless, depressed, or alone (Liu et al, 2023), and there are also examples of connectedness experiences in which one's self is felt to expand and enlarge, encompassing more of reality or even being identical to it (Ivanhoe, 2018). The felt need to alter one's cognitive structures in order to make sense of one's experience is not necessary for connectedness, as a connectedness experience may be brought on and supported by cognitive structures one already possesses representing how one is connected to everyone and everything. One may also feel a need to alter one's cognitive structures to make sense of an experience without that experience involving any perception of connectedness, for instance when one witnesses shockingly abject cruelty. An altered sense of time or space accompanies other experiences which needn't include connectedness, such as when one experiences flow by being engrossed in an activity which appropriately balances one's skills with demands (Nakamura & Csikszentmihalyi, 2020), or when one experiences boredom. And the kinds of perceived bodily changes associated with awe can also occur in cases of terror, while some experiences of connectedness involve inattention to one's body or disidentification from one's body, rather than attention to these changes in it (Milliere et al, 2018).

Second, connectedness differs from ego dissolution (Nour et al, 2016) or non-dual awareness (Hanley et al, 2018), a kind of experience often associated with Buddhist thought and with psychedelic use. Researchers who have addressed ego dissolution have tended to stress two aspects of this experience. One involves a loss or diminishment in one's sense of self, while the other involves an experience of connection or unity with a wide whole. There are different ways that the self-loss involved in ego dissolution has been understood and measured (Letheby, 2021: ch.7). One way involves perceiving oneself as less separate and distinct from other things. It's not that all perception of oneself is eliminated, but rather certain perceptions of oneself are replaced. One no longer perceives oneself to have firm and impermeable boundaries, but to have loose and permeated boundaries. Perceiving oneself in this way clearly can accompany some experiences of connectedness. One may feel connected

to everyone and everything by perceiving the boundaries of oneself as disintegrating and oneself merging or interacting with other things. Having this kind of perception of oneself is not necessary for experiencing connectedness, however, as one can perceive oneself as just as distinct as one always has and yet as interdependent with other things, for example. Thus, it may be that some experiences of ego dissolution represent one kind of connectedness experience—a kind in which a certain kind of self-diminishment accompanies a distinguishable experience of connectedness.

The self-loss involved in ego dissolution is sometimes understood and measured in more absolute, demanding terms, however. This demanding kind of self-loss is understood to involve a loss of all representation of oneself (Milliere, 2020). It is much harder to make sense of how these experiences could accompany experiences of connectedness, if we conceptualize the latter as involving perceptions of oneself as connected to a wide whole. And indeed the existence of such completely selfless states of consciousness is controversial. Speculatively, we might attempt to account for the possibility of such states constituting one kind of connectedness experience if we allow that at least in this one case experiencing connectedness does not require representing oneself, something else, and a connectedness relation between the two, but that here, where one experiences unity or non-duality with a wide whole (which certainly does seem like a kind of connection), one experiences this somehow without representing oneself. In any case, it should be clear that if there are such experiences and they are examples of connectedness experiences, they are far from the only kind of connectedness experience.

Finally, connectedness experiences differ from mystical experiences, at least in terms of how the latter have typically been conceptualized and measured in research. Like awe experiences, researchers have come to conceptualize mystical experiences as multifaceted, incorporating such facets as altered time perception, ineffability, connectedness (often called “extrovertive mystical experience”), ego dissolution (often called “introvertive mystical experience”), insight, bliss, and religious or spiritual interpretation (Barret et al, 2015). One very unfortunate feature of research on mystical experiences is that the most widely used scales for measuring mystical experiences fail to adequately distinguish between facets of these experiences that are known to be conceptually and empirically distinct on the basis of other research. For instance, in the M-scale (Hood, 1975), a measure of lifetime mystical experience, the “extrovertive mystical experience” factor and the “introvertive mystical experience” factor both contain items measuring altered time perception, while the latter involves items concerned with ineffability (closely related to need for accommodation). The MEQ-30 (Barret et al, 2015), a more recently developed measure of state mystical experience, runs together extrovertive mystical experience, introvertive mystical experience, and religious/spiritual interpretation, which are themselves treated as separate in the M-scale. Moreover, item writing for the introvertive and extrovertive mysticism facets has been poor in this literature, not clearly differentiating between these. As a result, the literature has tended to obscure the unique facets involved in mystical-type experiences with the unfortunate result that researchers and the public gain a muddled understanding of how exactly the different components involved in mystical-type experiences, including connectedness, relate to human well-being.

In addition to conflating connectedness with other features associated with mystical experiences, leading authors in the literature on mystical experience also conceptualize

mystical experiences in ways that differ importantly from the way connectedness experiences are conceptualized. An experience tends to be viewed as a more paradigmatic example of a mystical experience if it involves introvertive mystical experience (cf. ego dissolution) than if it merely involves connectedness (Hood, 2016); experiences involving only connectedness may be viewed as second-class mystical experiences. Obviously, this is not the case for connectedness experiences as, if anything, more extreme introvertive experiences fit at best somewhat uncomfortably into the category of connectedness experiences. Moreover, researchers have conceptualized and measured mystical experiences as somehow more “complete” mystical experiences if they include not only extrovertive or introvertive mystical elements, but also additional elements in the list above (Barret et al, 2015). An experience is not a more “complete” connectedness experience because it is accompanied by such features. While the core concept of an experience of connectedness has often featured in discussions of mystical experiences, the uniqueness of connectedness experiences and their value has been obscured by research practices and instruments in this literature, and leading researchers of mystical experiences conceptualize mystical experiences in ways that differ importantly from how connectedness experiences are conceptualized.

Thankfully, researchers addressing related topics have begun to do much better in terms of cleanly differentiating between connectedness experiences and other kinds of features commonly associated with these experiences. The connectedness subscale of the awe experiences scale (AES) (Yaden et al, 2019) and the unity subscale of the Varieties of Spiritual Experiences survey (Yaden & Newberg, 2022) are both examples which contain items clearly reflecting connectedness experiences and not some other related features. They contain items such as “I had the sense of being connected to everything”, “I felt a sense of communion with all living things”, “I experienced a sense of oneness with all things”, “I felt closely connected to humanity”, “I had a sense of complete connectedness”, “I felt a sense of oneness with all things”, “I felt at one with all things”, and “I felt completely connected to everything”. By using carefully crafted, narrowly focused scales such as these, researchers are in a better position to isolate and study the unique significance of connectedness experiences in relation to other associated experiences. We now turn to some of the early results this has produced.

## 2. The Transformative Power of Connectedness

There is a growing body of evidence that experiencing connectedness is uniquely associated with a wide variety of positive outcomes for people. When connectedness is distinguished from other features such as those discussed in the previous section, it emerges as distinctly predictive of benefits for individuals’ lives.

First, feeling connected is an overwhelmingly pleasant, enjoyable feeling. When examined alongside the other five facets of awe listed in the previous section, researchers found that only connectedness was positively associated with all eleven clusters of other positive emotions and not associated with any of ten clusters of negative emotions (Yaden et al, 2019). It was most distinct in this regard from self-diminishment and need for accommodation, each of which was positively correlated with all negative emotion clusters and only positively correlated with a few positive emotion clusters. Whereas connectedness is essentially pleasant, in cases of threat-awe awe can be partially if not fully unpleasant (Chaudhury et al,

2022). Likewise, where the kind of self-loss involved in ego dissolution has been distinguished from connectedness, the former has been found to relate to negative affect while connectedness only relates to positive affect (Sleight et al., 2023; Canby et al., 2024).

Second, connectedness promotes more resilient responses to stressors. Feeling connected to a wide whole can make stressors seem smaller and less threatening, can help put them into the context of a larger, positive narrative, can divert attention away from them and so reduce rumination on them, and can help a person feel that they are better able to manage stressors via their empowering connections. Research on awe has provided support for the unique role that connectedness in contrast to self-diminishment plays in supporting more adaptive responses to stressors such as social exclusion (Bai et al., 2021; Yuan et al., 2024). While measures of ego dissolution that include connectedness as a component have been found to relate to stress reduction (Uthaug et al., 2018), research also shows that the self-loss component of ego dissolution is associated with risk factors or indicators of stress such as difficulties with emotion regulation, impulsivity, neuroticism, and post-traumatic stress disorder symptoms, while connectedness is unrelated to these (Sleight et al., 2023).

Third, connectedness can protect against or ameliorate depression. It runs counter to mechanisms that sustain depression by promoting construals of the world as more hospitable and of oneself as having at least some valuable features and not being alone. Qualitative interviews with patients undergoing psychedelic-assisted psychotherapy have found that a major theme emphasized by patients to which they attribute positive outcomes of their therapy was a transition from disconnection to connection (Belser et al., 2017; Watts et al., 2017). One recent study found that awe mediated the effects of ketamine on depression at five time points post-infusion, while dissociation did not (Aepfelbacher, Panny, and Price, 2024). The study used the AES, and the only subscale related to reduced depression at all five time points was the connectedness subscale. Additionally, while research has found that ego dissolution is associated with reduced depression (Uthaug et al., 2019; Uthaug et al., 2018; van Oorsouw et al., 2022), research has also found that the self-loss aspect of ego dissolution is related to dissociation while connectedness is not (Sleight et al., 2023; Canby et al., 2024). This suggests that connectedness may largely account for the observed relationship between ego dissolution and reduced depression.

Fourth, connectedness promotes more prosocial attitudes and behaviors. It leads people to think about and treat other people in more benevolent ways because it involves experiencing other people as more harmoniously and intimately related to themselves. Feeling awe has been shown to promote greater empathy toward others and a greater proclivity to donate money or blood to others in one's in- and out-groups specifically because awe promotes feeling connected, rather than because it promotes self-diminishment (Luo et al., 2022). Similarly, feeling awe has been found to promote feeling greater moral concern for a wider variety of entities such as friends, family, in-group, out-group, and animals, via promoting connectedness but not via promoting self-diminishment (Song et al., 2023). Contact with nature has been shown to promote a wide variety of prosocial tendencies and behaviors including trusting, helping, and public spending, with this relationship mediated by feeling connected to something greater than oneself and feeling connected to nature (Castelo et al., 2021; Mei et al., 2024). On the flip side, feeling connected reduces anti-social attitudes and behaviors. Psychedelic use has been found to predict lower trait narcissism because it predicts connectedness, but not because it predicts ego dissolution (van Mulukom et al., 2020).

Research has found that feeling awe can lead to reduced dehumanization of obese people because feeling awe leads people to perceive others as sharing a common group identity with themselves—something commonly featured in connectedness experiences (Lv et al., 2024). Similarly, awe is related to reduced stigma towards individuals with AIDS, because awe promotes connectedness and in turn empathy (Luo et al., 2022). Finally, research has found that tendencies to feel awe predict lower tendencies to engage in corrupt behaviors because awe is associated with more frequent feelings of connectedness (Jiao & Luo, 2024).

Fifth, connectedness also fosters pro-environmental attitudes and behaviors. Feeling and thinking of oneself as connected to nature is a robust predictor of pro-environmental behaviors such as individual acts that support conservation or sustainability (Whitburn et al., 2019). Awe promotes pro-environmental behaviors via promoting connectedness to nature (Yang et al., 2018), and psychedelic use does as well (Forstmann & Sagioglou, 2017). Yet, research using thematic analysis suggests that the observed link between psychedelic use and nature connectedness is itself mediated by experiences of connectedness (Irvine et al., 2023).

Sixth, connectedness promotes experiencing greater meaning in one's life. The experience of meaning is theorized to involve perceiving one's life as making sense, being purposeful, and mattering (Kauppinen, 2022), and these perceptions tend to be supported by experiences in which one perceives oneself to fit into the larger scheme of things as one does in connectedness. Research has found that tendencies to experience awe are related to experiencing greater meaning in life (Dong & Geng, 2023), but awe-interventions have mixed effects on meaning. It is clear from experimental research that awe does not promote but diminishes meaning via self-diminishment (Cavallaro et al., 2025). Instead, awe promotes meaning via mechanisms distinctively associated with the connectedness facet of awe: self-transcendence (Yuan et al., 2024; Jiang & Sedikides, 2022) and positive affect (Dai et al., 2022; Cavallaro et al., 2025). Research has indeed found that connectedness is more strongly correlated with meaning than is any other awe facet (Wilt et al., 2025). Psychedelic usage is known to be considered personally meaningful to practitioners as well as to promote greater perceived coherence and purpose in life, with both of these effects being significantly related to whether the psychedelic promotes a mystical-type experience (e.g., Griffiths et al., 2018). But research to date has not explored whether connectedness in contrast to other mysticism-relevant facets drives this relationship.

Seventh, experiencing connectedness contributes to several knowledge-related goods. Any connectedness experience involves a representation of a person being somehow, someway connected to a wide whole. But everyone is in fact connected someway, somehow to a wide whole; and so any connectedness experience is accurate at least in this respect. Not only is it accurate, but because it is experiential, connectedness provides experiential, acquaintance knowledge of the connection between oneself and a wide whole (Hasan & Fumerton, 2019). Experiencing connectedness may also be accompanied by a phenomenological sense of knowing or understanding or insight; a person who experiences connectedness may feel that they thereby really “get” how they are connected, that this “clicks” for them. This felt insight is reflected both in some items that measure experiences related to connectedness (Barret et al, 2015) as well as in descriptions provided by individuals who have psychedelic experiences (Peill et al, 2022). Experimental research on awe provides evidence that self-diminishment is related to reduced feelings of knowing one's true self, whereas the feelings of happiness that arise from awe, which we have seen to be promoted by connectedness, predict enhanced



feelings of knowing one's true self (Cavallaro et al., 2025). Awe is known to be an epistemic emotion which directs attention to entities and information beyond the self, prompting interest and exploration in these; and among the facets of awe both connectedness and the perception of something vast, which I have suggested is prototypically a component of connectedness experiences, are related to these outcomes (Yaden et al., 2019; Graziosi et al., 2024).

Eighth and finally, connectedness promotes an overall sense of well-being or satisfaction with one's life. Individuals' judgments of how satisfied they are with their lives are influenced by many factors that might contribute positively or negatively to their lives. Thus, insofar as connectedness influences the seven outcomes already identified, we may expect it to indirectly influence satisfaction with life as well. Bai and colleagues (2021) demonstrate precisely this kind of relationship running from awe through connectedness to reduced stress and ultimately enhanced life satisfaction. Liu and colleagues (2023) found that awe promotes greater life satisfaction via promoting nature connectedness and not via promoting self-diminishment. In a study that developed a short form of the AES, the only awe facet that uniquely positively predicted life satisfaction was connectedness (Graziosi et al., 2024). Psychedelic use is related to enhanced life satisfaction via mystical-type experiences (Kangaslampi, 2023), although to my knowledge research in this area has not distinguished the effects of connectedness from other features closely associated with mystical-type experiences (cf. Yaden et al., 2024).

My aim in this section has been to point to evidence for thinking that experiencing connectedness uniquely contributes to promoting a wide variety of valuable features in a person's life. Research has often found that experiences which include connectedness are related to these outcomes, and when research has carefully distinguished connectedness from other features associated with these experiences there is a pattern of results suggesting that connectedness contributes uniquely to these outcomes in comparison to these other features. In some cases, connectedness largely or exclusively explains why constructs like awe or mystical experiences or ego dissolution are related to beneficial outcomes. Connectedness is not the only contributor to these outcomes, but when compared with other features in its near vicinity it appears to be especially important. The breadth of beneficial outcomes associated with connectedness and the unique relationship between connectedness and these outcomes make connectedness particularly intriguing as a mechanism for fostering human well-being.

### 3. Causes of Connectedness

In this section, I briefly review some of the known causes that can contribute to experiences of connectedness.

First, there are individual differences in personality or psychology that can promote connectedness. Greater openness to novel experiences (Yaden et al., 2019; Graziosi et al., 2024) and a tendency to actively engage one's experiences with multiple senses are related to feeling connected (van Elk et al., 2016; Byerly, 2024). Religiousness or spirituality is also predictive of connectedness. Religion and especially spirituality are predictive of awe (Kearns & Tyler, 2022), and some measures of spirituality have even included connectedness as a component (Piedmont et al., 2008). Religious objects are frequent causes of awe (Yaden

et al., 2019), and engaging in religious and spiritual practices has been found to promote connectedness (Aspy & Proeve, 2017; Byerly, 2024). Generally speaking, religions tend to provide worldviews which describe how a person is connected to a wide whole; practical engagement with these worldviews can promote perceptions of oneself as connected to a wide whole in the way the worldview describes (Wynn, 2020; Byerly, 2024).

Second, there are specific features of situations that can tend to promote connectedness. Many but not all situational elicitors of awe will also tend to elicit connectedness. For instance, beautiful natural scenery, especially sweeping and spacious panoramic views, experienced both in situ and virtually, is associated with awe and connectedness (van Rompay et al., 2023). Likewise, viewing the earth from space, or simulating this virtually, promotes connectedness (McKeever et al., 2024). Group dancing (Kuttner, 2024) and other kinds of group movement and synchrony (Rimé & Páez, 2023) can promote connectedness, as can audiovisual stimuli that cause aesthetic chills (Christov-Moore et al., 2024).

Finally, there are chemical causes of connectedness experiences. The chief example here is psychedelics and other drugs with psychedelic properties, which are known to reliably induce mystical-type experiences involving connectedness (Carhart-Harris et al., 2018). There continue to be legal barriers to the use of psychedelics in many countries. Psychedelics are also known to have some risk of producing negative side-effects, and researchers in this area have tended to emphasize the importance for positive outcomes of the set and setting in which psychedelics are used, such as the experienced support a person receives while undergoing their psychedelic experience (Hartogsohn, 2024). An emerging area of research focuses on synergistic strategies that combine psychedelics with other types of support for mental health or mystical-type experiences, such as mindfulness practices or nature contact (Holas & Kaminska, 2023).

#### 4. What God and the Christian Tradition can Offer

I will briefly suggest some ways that God and the Christian tradition can promote connectedness experiences in general as well as perhaps promoting especially valuable kinds of connectedness experiences.

First, God can promote connectedness experiences by doing awesome things, since many awe-elicitors (including religious ones) also elicit connectedness. In fact, it is hard to think of things God would do that are not awesome and candidates for eliciting connectedness. Even events that would not ordinarily elicit awe or connectedness, such as a blade of grass's moving one way rather than another, might occasion these if they are perceived to be divinely caused. Empirical research has in fact found that awe of God specifically is related to connectedness (Krause & Hayward, 2015).

Of course, not every awesome thing God does is perceived as such. This raises the possibility that another thing God can do to promote connectedness is to enable people to perceive things as related to God in the right kind of way to prompt connectedness. God can reveal Godself, for example, as the I AM who was, is, and ever will be, as the sustainer of all there is, and so on.

This idea about the need to perceive God's relationship to things also suggests an important role for the Christian Tradition in promoting connectedness experiences. As a spiritual tradition, Christianity provides a theological worldview and a set of practices which can enable practitioners to experience themselves in accordance with that worldview in a way that transforms them (Wynn, 2020). The Christian worldview includes both generic monotheism and specifically Christian commitments. Minimally, generic monotheism could be formulated as the view that there is a single loving ultimate source of contingent reality. Minimally, Christianity claims that this loving ultimate source uniquely works through Jesus Christ to relate human beings rightly to itself. Even these very simple (some would say simplistic) descriptions of a theistic and Christian worldview are enough to illustrate how this worldview provides people with a way of thinking about their place in reality as a whole. Thinking that one is placed in reality as a whole in the way this worldview specifies is not enough to experience connectedness, as noted in Section 1, but it is an important support for experiencing connectedness. People with such a worldview are better positioned to perceive themselves as somehow connected to a wide whole.

Beyond a way of thinking about one's place in reality as a whole, what is needed in order to experience connectedness are practices that make this way of thinking come alive in felt, lived experience. The Christian tradition also provides such practices. Indeed, many of these practices manipulate one or more of the pathways noted in Section 3 for promoting connectedness, such as music, group synchrony, and rich, multi-sensory imaginative engagement with the Christian worldview that helps participants become absorbed in that worldview.

The Christian tradition is not the only spiritual tradition that provides a worldview and set of practices capable of supporting experiences of connectedness. Indeed, this is a common feature of the world's great religious and philosophical traditions. However, there are aspects of theistic and Christian spiritual traditions that may lend themselves toward promoting especially valuable connectedness experiences.

Thus far, I have spoken about connectedness experiences as if they are a monolith, or at least as if they contain a common core. The idea that such experiences contain a common core across different traditions, locations, and times, has been an influential thesis in the study of mysticism (Hood, 2016). Defenders of the common core thesis claim that mystical-type experiences contain the same content wherever they are had, though individuals who have these experiences may differ in their interpretation of these experiences. Objectors to the common core thesis may claim that diverse worldview ideology can cognitively penetrate experience so that the content of mystical experiences can differ depending on the worldview of the experient.

I do not wish here to make a stand on this debate. But what I do want to point out is that there are certainly live questions about whether differences in *connectedness experiences combined with interpretations thereof* may be significant for individuals' well-being outcomes. Connectedness researchers are just beginning to uncover the potential diversity of connectedness experiences combined with interpretations (Forstmann & Sagioglou, 2025). And there is already some evidence for thinking that differences matter. For instance, one intriguing study found that psychedelics' effect on well-being was mediated by individuals' endorsement of the theory of metaphysical idealism (Jylkka et al., 2024).

I propose that the experience of connectedness combined with a theistic or Christian interpretation thereof could have some unique benefits compared to certain other connectedness experiences with different interpretations. A theistic, Christian connectedness experience is more likely to prompt a sense of intentional purpose to one's life, felt love by a cosmic other, and aspiration for interpersonal closeness than accompanies non-theistic, non-Christian connectedness experiences. When the Christian feels connected, they can feel connected not just to an impersonal everything, but to the loving one through whom all else is connected. In this way, Christian connectedness may be particularly related to the satisfaction of relational attachment needs and may promote well-being through promoting secure attachment to God (Cherniak et al., 2023). In partial support of some of these ideas, research has found that awe of God promotes well-being by promoting meaning in life (Upenieks & Krause, 2022), and that experiencing connectedness promotes belief in God (Critchler & Lee, 2018).

## 5. Proposed Implications for Christian Spiritual Formation Leaders

Finally, I tentatively propose eight implications of the above ideas for Christian spiritual formation leaders.

First, Christian spiritual formation leaders should promote active, multi-sensory imaginative engagement with the diverse depictions of connectedness within Christian Scriptures and tradition. Christian Scriptures are filled with remarkably vivid, engaging metaphors that depict the connectedness of the cosmos. The vine and the branches, the husband and wife, the body of Christ, and so on. The tradition expands on these and introduces still further metaphors conveying fundamental theological truths about the way all things are connected in God. Leaders should make use of these resources by encouraging immersive engagement with them.

Second, they should promote active participation in Christian group rituals. Connectedness can be achieved alone, but there are important social supports for connectedness available to Christians that should be utilised. Dance together, sing together, recite together, move together.

Third, they should promote the pursuit of connectedness beyond the church walls. One of the most powerful elicitors of connectedness is nature. Leaders should encourage those in their charge to get out into nature and live their Christian spirituality on mountaintops, by the seaside, under the night sky, etc. They can also bring nature into their worship settings, for example via awe-inspiring multimedia representations.

Fourth, they should own what the Christian tradition shares in common with other religious and spiritual traditions and individuals which also value connectedness but may pursue it in different ways. Religious and non-religious non-Christians, including religious "nones" and spiritual-but-not-religious individuals, crave connectedness too. Leaders should generally affirm the value non-Christians place on connectedness, and demonstrate their shared appreciation of connectedness. This may even be an important lever to use in reaching non-Christians about the value of the Christian tradition. Highlight that the tradition offers resources for helping non-Christians experience something they already care about. Put on

events that help people experience connectedness regardless of their affiliation or lack thereof with Christianity. Work together with other groups pursuing connectedness.

Fifth, to the extent their specific tradition allows, leaders should encourage exploration of diverse theological and cosmological models that may support connectedness. The Christian tradition, when understood broadly, contains diverse voices about exactly how to think about the God-world relationship, including more pantheistic, panentheistic, and idealist voices (Diller, 2021). Practitioners may appreciate being equipped to experiment with these different theological understandings. Moreover, theistic and Christian worldview ideas are not the only ones that can help support connectedness experiences. Notably, these ideas are remarkably flexible in the sense that they can tolerate being combined with ideas central to other worldviews that may also promote connectedness, such as Buddhist ideas of a small self or Neo-Confucian ideas of an enlarged self (Byerly, 2024). Such ideas about the ways that reality may be connected and the tradition-inspired practices that support them can in some cases be combined with theistic, Christian ideas and practices to support connectedness experiences.

Sixth, leaders should avoid leading practitioners to focus too much on their own individual relationship with God abstracted away from the rest of the world. I noted in Section 4 that Christian connectedness may somewhat uniquely promote attachment to God and downstream associated benefits. But the point here is that connectedness experiences themselves are less likely to be promoted if the practitioner excludes from their purview the rest of the world. What should be encouraged if connectedness is to be cultivated are perceptions of the relationship one has to God as one person in the wider world God loves and cares for.

Seventh, leaders should have a brave conversation engaging with experts about psychedelics. Some should, anyway. The rest of the world is going to have this conversation with or without Christians. It would be a shame for Christians to fall behind on the topic and be left potentially scrambling to address it only when regulatory changes force the issue. I don't have a solution or ultimate recommendation to offer about whether and in what ways psychedelics should be integrated into Christian spiritual formation; my recommendation is that leaders in Christian spiritual formation should engage experts in an ongoing conversation about it, as some are already doing (e.g., McCarthy, 2022; Cole-Turner, 2025).

Eighth and finally, leaders should beware of valuing connectedness more than God, and of overvaluing it. I've tried to paint a compelling picture of many ways that connectedness is valuable. But even things that are highly valuable can be overvalued. Feeling connected may have certain limits or liabilities. For instance, if one feels connected particularly to one group of people, including one's Church, this might motivate behaviors that could ultimately unfairly disadvantage out-groups. Feeling connected tends to promote conformity (Prade & Sargolou, 2023), and so other mechanisms may be needed when active resistance to socially acceptable injustices is called for. There can also be a particular temptation to value highly valuable things more than God. In this case, the great danger is for practitioners to treat God as a mere means to experiencing connectedness, caring more about whether they feel connected than they do about God (cf. Dumsday, 2014). I believe the tradition would diagnose that as idolatry, and so leaders in Christian spiritual formation should urge caution about it.

## 6. Conclusion

The experience of connectedness is unique and uniquely valuable in many ways. God and the Christian tradition have much to offer to Christians and non-Christians in terms of promoting this transformative feeling and thereby enhancing peoples' lives. Christian spiritual formation leaders should promote connectedness creatively, flexibly, and cooperatively as their specific traditions allow, while taking care not to overestimate the value of connectedness or to treat God as a mere means to cultivating it.

## References

- Aepfelbacher, Julia, Panny, Benjamin, & Price, Rebecca B. (2024). "Experiences of Awe Mediate Ketamine's Antidepressant Effects: Findings From a Randomized Controlled Trial in Treatment-Resistant Depression." *Biological Psychiatry Global Open Science*, vol.4, 4, 100316. <https://doi.org/10.1016/j.bpsgos.2024.100316>.
- Aspy, Denholm, & Proeve, Michael. (2017). "Mindfulness and Loving-Kindness Meditation: Effects on Connectedness to Humanity and to the Natural World." *Psychological Reports*, 120 (1), 102.
- Bai, Y., Maruskin, L. A., Chen, S., Gordon, A. M., Stellar, J. E., McNeil, G. D., Peng, K., & Keltner, D. (2017). Awe, the diminished self, and collective engagement: Universals and cultural variations in the small self. *Journal of Personality and Social Psychology*, 113(2), 185–209. <https://doi.org/10.1037/pspa0000087>
- Bai, Y., Ocampo, J., Jin, G., Chen, S., Benet-Martinez, V., Monroy, M., Anderson, C., & Keltner, D. (2021). Awe, daily stress, and elevated life satisfaction. *Journal of Personality and Social Psychology*, 120(4), 837–860. <https://doi.org/10.1037/pspa0000267>
- Barrett FS, Johnson MW, Griffiths RR. Validation of the revised Mystical Experience Questionnaire in experimental sessions with psilocybin. *Journal of Psychopharmacology*. 2015;29(11):1182-1190. doi:[10.1177/0269881115609019](https://doi.org/10.1177/0269881115609019)
- Belser, A. B., Agin-Liebes, G., Swift, T. C., Terrana, S., Devenot, N., Friedman, H. L., Guss, J., Bossis, A., & Ross, S. (2017). Patient Experiences of Psilocybin-Assisted Psychotherapy: An Interpretative Phenomenological Analysis. *Journal of Humanistic Psychology*, 57(4), 354-388. <https://doi.org/10.1177/0022167817706884>
- Byerly, T. R. (2024). *Faith, Flourishing, and Agnosticism*. Oxford University Press.
- Canby, Nicholas K., Lindahl, Jared, Britton, Willoughby B., & Córdova, James V. (2024). "Clarifying and measuring the characteristics of experiences that involve a loss of self or a

- dissolution of its boundaries.” *Consciousness and Cognition*, vol. 119, 103655. <https://doi.org/10.1016/j.concog.2024.103655>.
- Carhart-Harris, R.L., Erritzoe, D., Haijen, E. *et al.* “Psychedelics and connectedness.” *Psychopharmacology* **235**, 547–550 (2018). <https://doi.org/10.1007/s00213-017-4701-y>
- Carhart-Harris, R.L., Erritzoe, D., Haijen, E. *et al.* Psychedelics and connectedness. *Psychopharmacology* **235**, 547–550 (2018). <https://doi.org/10.1007/s00213-017-4701-y>
- Castelo, Noah, White, Katherine, & Goode, Miranda R. (2021). “Nature promotes self-transcendence and prosocial behavior.” *Journal of Environmental Psychology*, vol. 76, 101639. <https://doi.org/10.1016/j.jenvp.2021.101639>.
- Cavallaro, R. M., Church, M. H., Giddens, B. J., & Rivera, G. N. (2025). Complex effects of awe on meaning in life and true self-knowledge. *Self and Identity*, 1–28. <https://doi.org/10.1080/15298868.2025.2458844>
- Chaudhury, Srinwanti H., Garg, Nitika, & Jiang, Zixi. (2022). “The curious case of threat-awe: A theoretical and empirical reconceptualization.” *Emotion*, Vol 22(7), 1653-1669.
- Cherniak, A. D., Gruneau Brulin, J., Mikulincer, M., Östlind, S., Carhart-Harris, R., & Granqvist, P. (2022). Psychedelic Science of Spirituality and Religion: An Attachment-Informed Agenda Proposal. *The International Journal for the Psychology of Religion*, 33(4), 259–276. <https://doi.org/10.1080/10508619.2022.2148061>
- Christov-Moore L, Schoeller F, Lynch C, Sacchet M, Reggente N. (2024). Self-transcendence accompanies aesthetic chills. *PLOS Ment Health* 1(5): e0000125. <https://doi.org/10.1371/journal.pmen.0000125>
- Cole-Turner, Ron. (2025). *Psychedelics and Christian faith: Exploring an unexpected pathway to healing and spirituality*. Cascade Books.
- Critcher, C. R., & Lee, C. J. (2018). Feeling Is Believing: Inspiration Encourages Belief in God. *Psychological Science*, 29(5), 723-737. <https://doi.org/10.1177/0956797617743017>
- Dai, Y., Jiang, T. & Miao, M. Uncovering the Effects of Awe on Meaning in Life. *J Happiness Stud* **23**, 3517–3529 (2022). <https://doi.org/10.1007/s10902-022-00559-6>
- Diller, Jeanine. (2021). “God and other ultimates.” In *Stanford Encyclopedia of Philosophy*, ed. Edward Zalta. Available at <https://plato.stanford.edu/entries/god-ultimates/>
- Dong, X., Geng, L. (2023). The role of mindfulness and meaning in life in adolescents’ dispositional awe and life satisfaction: the broaden-and-build theory perspective. *Curr Psychol* **42**, 28911–28924. <https://doi.org/10.1007/s12144-022-03924-z>
- Dumsday, Travis. (2014). “Divine Hiddenness and the Opiate of the People.” *International Journal for Philosophy of Religion* 76, 2: 193-207.
- Forstmann M, Sagioglou C. Lifetime experience with (classic) psychedelics predicts pro-environmental behavior through an increase in nature relatedness. *Journal of Psychopharmacology*. 2017;31(8):975-988. doi:[10.1177/0269881117714049](https://doi.org/10.1177/0269881117714049)

- Forstmann, Matthias, & Sagioglou, Christina. (2025). Psychedelics and connectedness to natural and social worlds: An examination of the evidence and a proposed conceptual framework. *Current Opinion in Psychology*, Volume 62, 101992. <https://doi.org/10.1016/j.copsyc.2025.101992>.
- Graziosi, M, Rohde, JS, Lake, S, Lucas, P, Kaufman, SB, & Yaden, DB. (2024). “Developing a short form of the Awe Experience Scale (AWE-SF) in psychedelic samples. *PLoS ONE* 19(12), e0314469. <https://doi.org/10.1371/journal.pone.0314469>
- Griffiths RR, Johnson MW, Richards WA, et al. Psilocybin-occasioned mystical-type experience in combination with meditation and other spiritual practices produces enduring positive changes in psychological functioning and in trait measures of prosocial attitudes and behaviors. *Journal of Psychopharmacology*. 2018;32(1):49-69. doi:[10.1177/0269881117731279](https://doi.org/10.1177/0269881117731279)
- Hanley, A. W., Nakamura, Y., & Garland, E. L. (2018). The Nondual Awareness Dimensional Assessment (NADA): New tools to assess nondual traits and states of consciousness occurring within and beyond the context of meditation. *Psychological Assessment*, 30(12), 1625–1639. <https://doi.org/10.1037/pas0000615>
- Harris, S. (2015). *Waking Up: Searching for Spirituality without Religion*. Black Swan.
- Hartogsohn, I. (2024). Set and Setting for Psychedelic Harm Reduction. In: *Current Topics in Behavioral Neurosciences*. Springer, Berlin, Heidelberg. [https://doi.org/10.1007/7854\\_2024\\_509](https://doi.org/10.1007/7854_2024_509)
- Hasan, Ali & Fumerton, Richard. (2019). “Knowledge by acquaintance vs description.” In *Stanford Encyclopedia of Philosophy*, ed. Edward Zalta. Available at <https://plato.stanford.edu/entries/knowledge-acquaindescrip/>
- Holas, P., Kamińska, J. (2023). Mindfulness meditation and psychedelics: potential synergies and commonalities. *Pharmacol. Rep* 75, 1398–1409. <https://doi.org/10.1007/s43440-023-00551-8>
- Hood, R. (2016). “The Common Core Thesis in the Study of Mysticism.” In *Oxford Research Encyclopedias, Religion*. <https://doi.org/10.1093/acrefore/9780199340378.013.241>
- Hood, R. W. (1975). The Construction and Preliminary Validation of a Measure of Reported Mystical Experience. *Journal for the Scientific Study of Religion*, 14(1), 29–41. <https://doi.org/10.2307/1384454>
- Irvine, A., Luke, D., Harrild, F., Gandy, S., & Watts, R. (2023). Transpersonal Ecodelia: Surveying Psychedelically Induced Biophilia. *Psychoactives*, 2(2), 174-193. <https://doi.org/10.3390/psychoactives2020012>
- Ivanhoe, Philip. (2018). *Oeness: East Asian Conceptions of Virtue, Happiness, and How We are All Connected*. Oxford University Press.
- James, W. (1902). *The Varieties of Religious Experience*. New York: Longmans, Green.



Jia Liu, Yongquan Huo, Jing Wang, Yang Bai, Meng Zhao, Meilin Di. (2023) “Awe of nature and well-being: Roles of nature connectedness and powerlessness.” *Personality and Individual Differences*, 201, 111946.

Jiang, Tonglin, & Sedikides, Constantine. (2022). “Awe motivates authentic-self pursuit via self-transcendence: Implications for prosociality.” *Journal of Personality and Social Psychology*, Vol 123(3), 576-596.

Jiao, L., & Luo, L. (2024). Dispositional awe negatively predicts corruption via the sense of connectedness. *PsyCh Journal*, 13(4), 608–615. <https://doi.org/10.1002/pchj.737>

Jylkkä, J., Krabbe, A. & Jern, P. Endorsement of metaphysical idealism mediates a link between past use of psychedelics and wellbeing. *Sci Rep* **14**, 13276 (2024). <https://doi.org/10.1038/s41598-024-63687-4>

Kangaslampi, S. (2023). Association between mystical-type experiences under psychedelics and improvements in well-being or mental health – A comprehensive review of the evidence. *Journal of Psychedelic Studies*, 7(1), 18-28. <https://doi.org/10.1556/2054.2023.00243>

Kauppinen, Antti. (2022). “The Experience of Meaning.” In *The Oxford Handbook of the Meaning of Life*, ed. Iddo Landau, 343-55. Oxford University Press.

Kearns, P. O., & Tyler, J. M. (2022). Examining the relationship between awe, spirituality, and religiosity. *Psychology of Religion and Spirituality*, 14(4), 436–444. <https://doi.org/10.1037/rel0000365>

Krause, Neal, & Hayward, R. David. (2015). Assessing whether practical wisdom and awe of God are associated with life satisfaction. *Psychology of Religion and Spirituality*, Vol 7(1), 51-59.

Kuttner, B. (2024). The Dance That Reconnects. In: Walter, O., Fitzsimmons, P., Kasler, J., Routray, S. (eds) *Breaking the Silos*. Springer, Singapore. [https://doi.org/10.1007/978-981-97-5049-8\\_2](https://doi.org/10.1007/978-981-97-5049-8_2)

Letheby, C. (2021). *Philosophy of Psychedelics*. Oxford University Press.

Luo, L., Zou, R., Yang, D., & Yuan, J. (2022). Awe experience triggered by fighting against COVID-19 promotes prosociality through increased feeling of connectedness and empathy. *The Journal of Positive Psychology*, 18(6), 866–882. <https://doi.org/10.1080/17439760.2022.2131607>

Luo, Li, Dong, Yang, Yu, Tian, Wei, Gao, Jiemin, Yang, & Jiajin, Yuan. (2022). “Awe weakens the AIDS-related stigma: The mediation effects of connectedness and empathy.” *Frontiers in Psychiatry*, vo. 13. <https://www.frontiersin.org/journals/psychiatry/articles/10.3389/fpsyt.2022.1043101>

Lv, Y., Tang, Q., Wang, S. *et al.* Awe weakens the blatant dehumanization of people with obesity via common ingroup identity. *Curr Psychol* **43**, 15328–15341 (2024). <https://doi.org/10.1007/s12144-023-05509-w>

- McCarthy, Bryan. (2022). Christianity and Psychedelic Medicine: A Pastoral Approach. *Christian bioethics: Non-Ecumenical Studies in Medical Morality, Volume 29*, Issue 1, 31-57. <https://doi.org/10.1093/cb/cbac008>
- McKeever, Niall, Annahita, Nezami, & Kourtis, Dimitrios. (2024). "The overview effect and nature-relatedness." *Frontiers in Virtual Reality*, 5. <https://www.frontiersin.org/journals/virtual-reality/articles/10.3389/frvir.2024.1196312>
- Mei, Dongmei, Yang, Ding, Li, Tong, Zhang, Xin, Rao, Kang, & Li, Liman. (2024). "Nature contact promotes prosociality: The mediating roles of self-transcendence, nature connectedness, and materialism." *Journal of Environmental Psychology, Volume 96*, 102324. <https://doi.org/10.1016/j.jenvp.2024.102324>.
- Milliere, R., Carhart-Harris, R. L., Roseman, L., Trautwein, F. M., & Berkovich-Ohana, A. (2018). Psychedelics, meditation, and self-consciousness. *Frontiers in Psychology*, 9(SEP). <https://doi.org/10.3389/fpsyg.2018.01475>
- Milliere, R. (2020). "The Varieties of Selflessness." *Philosophy and the Mind Sciences* 1, 1: 1-41.
- Nakamura, J & Csikszentmihalyi, M. (2020). "The Experience of Flow: Theory and Research." In *The Oxford Handbook of Positive Psychology*, ed. C. Snyder et al, 279-96. Oxford University Press.
- Nour, Matthew M. , Evans, Lisa, Nutt, David, & Carhart-Harris, Robin L. (2016). "Ego-Dissolution and Psychedelics: Validation of the Ego-Dissolution Inventory (EDI)." *Frontiers in Human Neuroscience, vol. 10*. <https://www.frontiersin.org/journals/human-neuroscience/articles/10.3389/fnhum.2016.00269>
- Peill JM, Trinci KE, Kettner H, et al. Validation of the Psychological Insight Scale: A new scale to assess psychological insight following a psychedelic experience. *Journal of Psychopharmacology*. 2022;36(1):31-45. doi:[10.1177/02698811211066709](https://doi.org/10.1177/02698811211066709)
- Piedmont, R. L., Kennedy, M. C., Sherman, M. F., Sherman, N. C., & Williams, J. E. G. (2008). "A Psychometric Evaluation Of The Assessment Of Spirituality And Religious Sentiments (Aspires) Scale: Short Form". In *Research in the Social Scientific Study of Religion, Volume 19*. Leiden, The Netherlands: Brill. <https://doi.org/10.1163/ej.9789004166462.i-299.55>
- Piff, P. K., Dietze, P., Feinberg, M., Stancato, D. M., & Keltner, D. (2015). Awe, the small self, and prosocial behavior. *Journal of Personality and Social Psychology*, 108(6), 883–899. <https://doi.org/10.1037/pspi0000018>
- Prade, C., & Saroglou, V. (2023). Awe and social conformity: Awe promotes the endorsement of social norms and conformity to the majority opinion. *Emotion*, 23(7), 2100–2104. <https://doi.org/10.1037/emo0001225>
- Rimé, B., & Páez, D. (2023). Why We Gather: A New Look, Empirically Documented, at Émile Durkheim's Theory of Collective Assemblies and Collective Effervescence. *Perspectives on Psychological Science*, 18(6), 1306-1330. <https://doi.org/10.1177/17456916221146388>

Sleight, Fiona, Lynn, Steven, Mattson, Richard, & McDonald, Charlie. (2023). “A novel ego dissolution scale: A construct validation study.” *Consciousness and Cognition*, vol. 109, 103474. <https://doi.org/10.1016/j.concog.2023.103474>.

Song, Ji, Klebl, Christoph, & Bastian, Brock. (2023). “Awe promotes moral expansiveness via the small self.” *Frontiers in Psychology*, vol. 14. <https://doi.org/10.3389/fpsyg.2023.1097627>

Studerus, E, Gamma, A, Vollenweider, F.X. (2010). “Psychometric Evaluation of the Altered States of Consciousness Rating Scale (OAV).” *PLoS ONE* 5(8): e12412. doi:10.1371/journal.pone.0012412

Upenieks, L., & Krause, N. (2022). Transcendental awe of God and dimensions of well-being: exploring the mediating role of meaning in life. *Journal of Religion, Spirituality & Aging*, 36(1), 5–25. <https://doi.org/10.1080/15528030.2022.2114575>

Uthaug, M.V., Lancelotta, R., van Oorsouw, K. *et al.* A single inhalation of vapor from dried toad secretion containing 5-methoxy-*N,N*-dimethyltryptamine (5-MeO-DMT) in a naturalistic setting is related to sustained enhancement of satisfaction with life, mindfulness-related capacities, and a decrement of psychopathological symptoms. *Psychopharmacology* **236**, 2653–2666 (2019). <https://doi.org/10.1007/s00213-019-05236-w>

Uthaug, M.V., van Oorsouw, K., Kuypers, K.P.C. *et al.* Sub-acute and long-term effects of ayahuasca on affect and cognitive thinking style and their association with ego dissolution. *Psychopharmacology* **235**, 2979–2989 (2018). <https://doi.org/10.1007/s00213-018-4988-3>

van Elk, Michiel, Karinen, Annika, Specker, Eva, Stamkou, Eftychia, & Matthijs Baas. (2016). ‘Standing in Awe’: The Effects of Awe on Body Perception and the Relation with Absorption. *Collabra*, 2(1): 4. doi: <https://doi.org/10.1525/collabra.36>

van Mulukom, V., Patterson, R.E. & van Elk, M. Broadening Your Mind to Include Others: The relationship between serotonergic psychedelic experiences and maladaptive narcissism. *Psychopharmacology* **237**, 2725–2737 (2020). <https://doi.org/10.1007/s00213-020-05568-y>

van Oorsouw, K., Toennes, S.W. & Ramaekers, J.G. Therapeutic effect of an ayahuasca analogue in clinically depressed patients: a longitudinal observational study. *Psychopharmacology* **239**, 1839–1852 (2022). <https://doi.org/10.1007/s00213-021-06046-9>

van Rompay, Thomas J.L., Oran, Sandra, Galetzka, Mirjam, & van den Berg, Agnes E. (2023). “Lose yourself: Spacious nature and the connected self.” *Journal of Environmental Psychology*, Vol. 91, 102108. <https://doi.org/10.1016/j.jenvp.2023.102108>.

Watts, R., Day, C., Krzanowski, J., Nutt, D., & Carhart-Harris, R. (2017). Patients’ Accounts of Increased “Connectedness” and “Acceptance” After Psilocybin for Treatment-Resistant Depression. *Journal of Humanistic Psychology*, 57(5), 520-564. <https://doi.org/10.1177/0022167817709585>

- Whitburn, J., Linklater, W. and Abrahamse, W. (2020), Meta-analysis of human connection to nature and proenvironmental behavior. *Conservation Biology*, 34: 180-193. <https://doi.org/10.1111/cobi.13381>
- Wilt, J. A., Exline, J. J., Sherman, A., & Schlegel, R. J. (2024). Engagement with art and meaning in life: the predictive roles of awe, interest, supernatural attributions. *The Journal of Positive Psychology*, 1–15. <https://doi.org/10.1080/17439760.2024.2378709>
- Wynn, M. (2020). *Spiritual Traditions and the Virtues*. Oxford University Press.
- Yaden, D. & Newberg, A. (2022). *The Varieties of Spiritual Experiences: 21<sup>st</sup> Century Research and Perspectives*. Oxford University Press.
- Yaden, D. B., Haidt, J., Hood, R. W., Vago, D. R., & Newberg, A. B. (2017). The Varieties of Self-Transcendent Experience. *Review of General Psychology*, 21(2), 143-160. <https://doi.org/10.1037/gpr0000102>
- Yaden, D. B., Kaufman, S. B., Hyde, E., Chirico, A., Gaggioli, A., Zhang, J. W., & Keltner, D. (2018). “The development of the Awe Experience Scale (AWE-S): A multifactorial measure for a complex emotion.” *The Journal of Positive Psychology*, 14(4), 474–488. <https://doi.org/10.1080/17439760.2018.1484940>
- Yaden, D.B., Goldy, S.P., Weiss, B. *et al.* Clinically relevant acute subjective effects of psychedelics beyond mystical experience. *Nat Rev Psychol* 3, 606–621 (2024). <https://doi.org/10.1038/s44159-024-00345-6>
- Yang, Y., Hu, J., Jing, F., & Nguyen, B. (2018). From Awe to Ecological Behavior: The Mediating Role of Connectedness to Nature. *Sustainability*, 10(7), 2477. <https://doi.org/10.3390/su10072477>
- Yuan, Wenying, Du, Yuhui, & Jiang, Tonglin. “How and when awe improves meaning in life: The role of authentic-self pursuit and trait authenticity.” *Emotion*, Vol 24(2), 412-430.
- Yuan, Wenying, Guo, Tingjun, Jiang, Tonglin, & Wang, Fei. (2024). “Online social pain reliever: Online awe-intervening approach promotes recovery via the global sense of connectedness.” *Computers in Human Behavior*, vol. 158, 108283. <https://doi.org/10.1016/j.chb.2024.108283>.