

# Intersections Between Awe and the Sublime: A Preliminary Empirical Study

Empirical Studies of the Arts  
0(0) 1–31

© The Author(s) 2021

Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/0276237421994694

journals.sagepub.com/home/art



Robert R. Clewis<sup>1</sup> , David B. Yaden<sup>2</sup>  
and Alice Chirico<sup>3</sup>

## Abstract

This empirical study examines how philosophical work on the sublime relates to contemporary psychological work on awe. We operationalized several aspects of the sublime drawing from prominent philosophical theories and analyzed them in relation to three different measures of awe: the modified Differential Emotions Scale (mDES), the awe sub-scale of the Dispositional Positive Emotion Scale (DPES), and the Awe Experience Scale (AWE-S). We carried out an Exploratory Factor Analysis on our items on the sublime. We found high correlations between these items and the measures of awe, especially with the self-loss and connectedness dimensions of the AWE-S. By operationalizing aspects of the sublime drawn from influential philosophical theories and comparing them with psychological measures of awe, we find a large degree of overlap between awe and the sublime, suggesting that these two literatures could inform one another.

## Keywords

awe, sublime, empirical aesthetics, factor analysis, sublimity

---

<sup>1</sup>Philosophy Department, Gwynedd Mercy University, Gwynedd Valley, Pennsylvania, USA

<sup>2</sup>Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, Maryland, USA

<sup>3</sup>Faculty of Arts and Philosophy, Catholic University of the Sacred Heart of Milan, Italy Milan

## Corresponding Author:

Robert R Clewis, Gwynedd Mercy University, 1325 Sumneytown Pike, PO Box 901, Gwynedd Valley, PA 19437, USA.

Email: clewis.r@gmercyu.edu

The sublime has been the topic of a vast body of literature in philosophy for more than two millennia (Clewis, 2019a; Costelloe, 2012; Porter, 2015). While the sublime appears to be a topic of emerging interest in psychology, too (Bethelmy & Corraliza, 2019; Gordon et al., 2017; Pelowski et al., 2019; Van Elk et al., 2016; see also Ishizu & Zeki 2014), empirical psychologists have typically devoted more attention to awe. This interest was spurred by a seminal article on awe by Keltner and Haidt (2003) and has since been extended to a number of psychological sub-fields, including the empirical studies of the arts (Cotter et al., 2019). These interesting developments naturally raise the question: how does contemporary psychological work on awe relate to philosophical work on the sublime?

There is little consensus in either psychology or philosophy about how awe and the sublime are related to each other (Arcangeli et al., 2020). Some researchers hold that awe is a component of the sublime, others claim that the sublime is a kind of awe (Konečni, 2005, 2011), and still others hold that the two are related but do not specify how. A fourth perspective is simply to conflate the two concepts and use them interchangeably (Pelowski et al., 2019, p. 8). Giving an example of the first approach, Bethelmy and Corraliza (2019) propose that awe is part of the “sublime experience toward nature.” (The other key component of the sublime is what they call “inspiring energy.”) Bethelmy and Corraliza propose to view the sublime as a “unifying feeling that encompasses awe and positive and pleasurable emotions within a single construct.” Although in their recent review Arcangeli and colleagues do not set out to defend a particular view of the awe-sublime relation, they claim that “there are no *prima facie* reasons against” the position that the sublime is a kind of awe. They think that, unlike the other positions, the view that the sublime is a kind of awe “remains a workable option” (Arcangeli et al., 2020). They conclude that “further interdisciplinary studies should go deeper in the specification of, and comparison among, the more promising options we have delineated here” (Arcangeli et al., 2020). The present study can be viewed as a response to this call.

In recent work in philosophy, meanwhile, some theorists have held that the sublime and awe are distinct but somehow related. (Perhaps surprisingly, there is no philosophy of awe in the history of philosophy, whereas there is a venerable tradition surrounding the philosophy of the sublime.) For instance, Brady (2019) thinks of awe and the sublime as “neighboring concepts.” In short, a lack of clarity regarding the awe-sublime relation has led to a scholarly gap that we address in this paper.

## Philosophy of the Sublime

To justify our working definition of the sublime, and to provide background on the items we devised in order to measure aspects of the sublime, we provide a brief (and necessarily selective) overview of the philosophical literature on the

sublime. Philosophical discourse on the sublime has a particularly rich history going back, at least in the Greco-Roman tradition, to around the first century CE, namely to a work *On the Sublime (Peri Hypsous)* by an author simply known as Longinus or pseudo-Longinus (2019). Some scholars argue that since Plato wrote about *hypsous*, the sublime goes back even to Plato and to the Pre-Socratics before him (Kirwan, 2005; Porter, 2015; Shaw, 2017). Centuries later, Augustine (1961, p. 147) described a mixture of love and horror, and Aquinas (1947–1948) described a unique kind of affective fear that is felt before a “sublime” truth that cannot be fully comprehended (p. 1927).

In an influential treatise on the sublime, Edmund Burke (1757)—the author who is probably most cited by contemporary psychologists studying awe and the sublime—characterized the experience as a kind of “delight” caused by “terror” (Burke, 2019). Such (modified) terror was paradigmatically induced by objects with qualities such as power, vastness, obscurity, darkness, and seeming endlessness. Burke offered detailed psychophysiological descriptions of the experience, drawing from his understanding of the science of his day. In addition, he emphasized a distinction between the sublime and the beautiful. Whereas the experience of the sublime was triggered by qualities such as ruggedness and vastness, the feeling of beauty was elicited by features such as being small, smooth, polished, light, and delicate. Burke did not merely describe the sublime’s psychological effects, but also characterized features of the objects or conditions that were likely to elicit the experience. Moreover, he conceived of the sublime as an intense, bedazzling emotion (Burke, 2019, p. 80), which would distinguish it from wonder, which is traditionally understood in philosophy to be cognitive and reflective and to have less arousal.

In 1764, Immanuel Kant took up Burke’s ideas in the first half of a short treatise on the sublime and related topics in anthropology. In *Observations on the Feeling of the Sublime and Beautiful*, Kant divided the sublime into the terrifying, noble, and magnificent sublime (Kant, 2019b). But this was not Kant’s major contribution to the sublime—a point sometimes missed in the psychology literature (e.g., Bethelmy & Corraliza 2019). It was not until his work of 1790, *The Critique of the Power of Judgment*, that Kant presented his influential theory of the sublime, distinguishing the sublime into the dynamical (powerful) sublime and the mathematical (extensive) sublime (Kant, 2019a). Kant described the experience as a mixed but ultimately pleasant coordination between the mental capacities of reason and imagination. For Kant, the typical stimulus of the sublime experience was a marvel of nature. For this reason, his ideas have been important for contemporary theories of the environmental sublime (Brady, 2013, 2019). Even if he emphasized the natural sublime, Kant also acknowledged the possibility of feeling the sublime in response to art, though he added that the representation should at the same time be beautiful (Kant, 2019a).

Kant's ideas were further developed by Arthur Schopenhauer and G.W.F. Hegel in various ways relevant to our understanding of the sublime. While rejecting Kant's ultimate grounding of the sublime on a human capacity for morality, Schopenhauer accepted Kant's view that aesthetic experience required adopting a "disinterested" perspective. The sublime gave us insight into the world as it was in itself, in which we are all part of a larger whole (Schopenhauer, 2019). In order to experience the sublime, it was necessary to adopt a perspective in which private interests are downplayed or ignored, in a kind of loss of self. Thus, the experience involved an awareness of the smallness of everyday things and even of life itself, though (*pace* Kant), the sublime was not an experience in which reason finds its place in a *moral* order. Like Burke and Kant, Schopenhauer distinguished the sublime from beauty. Unlike Kant, he viewed the sublime as being on continuum from weaker to stronger forms of intensity and arousal. In his 1835 lectures on fine art, Hegel (2019) identified the sublime in art, above all, in the religious poetry found in the Indian, Persian, Hebrew, and Christian mystical traditions. The sublime involved a recognition of one's finite inadequacy, or insignificance, before a higher supernatural power or divinity. While Hegel discussed the sublime separately from beauty, in the end he viewed the sublime as a mode of beauty. We summarize these major theoretical elaborations of the sublime in Table 1.

*The sublime: a working definition.* Starting with Longinus (2019), theorists of the sublime commonly identified several aspects of the experience. Foremost among these is that the sublime is an intense, charged emotion with high arousal and containing a mixed (negative-positive) valence. Drawing on the main theories in the philosophical tradition, we thus understand the sublime as a mixed aesthetic experience of uplift and elevation in response to a powerful or vast object. Although the valence of the experience is generally mixed, it is overall a positive one, for participants typically desire the experience to continue. Drawing from previous theorists, we worked with the view that the sublime experience: involves a feeling of connectedness to a larger whole or order (Kant, Schopenhauer); involves a necessary sensory-perceptual aspect (on which nearly all theorists agree) even if it can also sometimes include reflection on the self or relation to nature; can be elicited by either art or nature (on which nearly all theorists agree); involves a sense of freedom or detachment from everyday affairs (Longinus, Kant, Schopenhauer); and activates and expands the imagination (Kant). On the other hand, we leave it an open question whether people feel more significant (or instead less) during the experience, as well as whether they reflect on themselves consciously and explicitly, as there is considerable theoretical disagreement about both issues, which merit further theoretical clarification and empirical investigation. It was not our aim to provide a comprehensive definition of the sublime, but rather to measure and then compare various aspects of the experience of the sublime with measures of awe.

**Table 1.** Summary of Key Points in Theories of the Sublime.

Author	Does the person feel insignificant and have sense of smaller self?	Does one experience a feeling of connectedness, and belonging?	Is the experience primarily sensory-perceptual, or cognitive?	Is the elicitor typically art (artifact), or nature?	Does one reflect on oneself (consciously, reflexively) during the experience?	Is the imagination activated and expanded?	Does one have a sense of freedom and detachment from the mundane?
Longinus (1st-3rd c. CE)	No, the soul appears to admire its nobility Unclear	Unclear	Can be either	Either, but typically poetry and rhetoric	Unclear	It seems so	Yes
Burke	Unclear	No, separation from the object of delightful terror	Primarily sensory-perceptual	Either: nature or art (especially poetry)	No	It seems so	Unclear
Kant	No, one feels significant on account of reason	Yes, belonging to the moral world or order	Can be either	Either: but typically nature	Yes (at least according to the standard interpretation)	Yes	Yes
Schopenhauer	Yes, one feels insignificant / smaller self (yet oneness with the world)	Yes, belonging to a universe or world, the one (metaphysically)	Can be either	Either nature or art (music, dramatic tragedy)	Yes, sometimes, but it is not necessary	Unclear	Yes
Hegel	Yes, one feels insignificant / smaller self	No, separation from the infinite (or supernatural power)	Can be either	Typically art (esp. religious poetry)	Unclear	Unclear	Unclear

**Table 2.** Items on the Sublime and Corresponding Dimension.

Item	Dimension of the sublime
To what extent did you feel your thoughts temporarily stop?	Thoughts stop
To what extent did you feel your imagination stopped?	Imagination stop
To what extent did you feel your imagination was engaged and active?	Imagination engaged
To what extent did you feel that your imagination was expanded?	Imagination expanding
To what extent did you feel that the pleasure of your experience came from an expansion of your imagination?	Pleasure from imagination expanding
To what extent did you feel that the pleasure of your experience came from an expanded sense of possibilities?	Pleasure from expanded possibilities
To what extent did ordinary events seem less significant?	Ordinary is less significant
To what extent did you feel more important during the experience?	Feel more important
To what extent did you feel less important during the experience?	Feel less important
To what extent did you think about your role in the world during your awe experience?	Role in the world
To what extent do you think this experience will leave a lasting impact on your life and attitudes?	Lasting impact
To what extent did you feel a sense of belonging during your awe experience?	Feeling of belonging
To what extent did you feel like you were part of something 'bigger'?	Part of something bigger
Did you think more about yourself or the world outside yourself during your awe experience?	Self or the world
To what extent did you have a feeling of goodness toward others during your awe experience?	Goodness towards others
During your awe experience, to what extent did you have a feeling of goodness toward the world?	Goodness to the world
To what extent were you aware that the experience was one of 'awe' as it was happening?	Self-awareness of the experience
To what extent was the feeling meaningful?	Experience was meaningful
To what extent was the feeling meaningless?	Experience was meaningless
To what extent did you feel removed from the world of everyday affairs?	Removed from affairs
To what extent did you feel elevated above the world of everyday affairs?	Elevated above affairs
To what extent did you feel that the pleasure of the experience came from being elevated above the world of everyday affairs?	Pleasure of being elevated above affairs

Moreover, while not our main topic, a word should be said about the suggestion that the sublime refers to the object while awe refers to the subjective emotion or experience. One might think that whereas awe refers to a subjective state, the sublime is an objective property. Instead, we follow Burke, Kant, and Wordsworth (to name a few among many) in treating the sublime as a mental state or reaction to a given elicitor. In the work of philosophers such as Burke (2019) and Kant (2019a), the sublime is understood as a subject's feeling. Our approach was already adopted by Keltner and Haidt (2003), who refer to the sublime as an awe-like aesthetic *emotion* (p. 299) and thus did not view it as an objective property. This perspective of the sublime as a subjective emotion or feeling is also found in a recent study of the sublime (Pelowski et al., 2019). Thus, there is precedent for our treatment of the sublime as a mental state rather than as an object of perception.

## Psychology of Awe

Awe, etymologically rooted in the Proto-Germanic word for terror or fear, has given rise to words such as “aweful” or “awful” (full of awe) and “awe-inspiring.” The word “awe” was occasionally used by prominent writers on the sublime (e.g. Burke), but, significantly, they did not analyze and discuss the concept of awe extensively or in detail.

Indeed, much psychological research on awe is rooted not in eighteenth-century authors, but in a seminal paper by Keltner and Haidt (2003). They posited two appraisal dimensions involved in triggering the emotion of awe. The first appraisal dimension is the response to vastness (either perceptually or conceptually). The second is a need to accommodate the vastness into one's mental schema. Although Keltner and Haidt briefly discussed Burke on the sublime, they did not substantially draw from philosophical outlooks on the sublime. Hur et al. (2020) correctly observe that the source of Keltner and Haidt's theorization is clearly “a matter of” the sublime, however. It is indeed surprising that Keltner and Haidt devoted only a few paragraphs to the centuries of philosophical work on the sublime, and that Keltner and Haidt did not pursue the notion further (Konečni, 2005, p. 30). Still, as noted, they did refer to the sublime as an “awe-like aesthetic emotion” (p. 299), and they appear to understand the (Burkean) sublime as a kind of awe.

According to some conceptualizations in psychology, awe contains a fear component. Gordon et al. (2017) introduce the notion of a threat-based awe, a negative experience in which fear is a major “component.” This would seem to bring awe close to the Burkean sublime, since Burke holds that there is an element of modified (delightful) terror in the sublime.

Analogously, some researchers claim that the *sublime* contains a fear component (Eskine et al., 2012; Ishizu & Zeki, 2014; Ortlieb et al., 2016). However, recent studies question or cast some doubt on whether there is a strong fear

component in the sublime (Hur et al., 2020; Pelowski et al., 2019). Such a view is closer to theories that, adopting a disinterested or distancing approach, downplay the fear in the sublime (Kant, Schopenhauer). It seems that the role of fear in the sublime remains to be investigated, as does whether there may be a threat-based variety of the sublime alongside the (more widely accepted) positive variety.

Within the framework introduced by Keltner and Haidt (2003), psychological studies of awe developed isolated from work on the sublime, until very recently. Explicit study of awe's connection to the sublime has been minimal, even if psychologists have occasionally drawn close connections between awe and the sublime (e.g., Bethelmy & Corraliza, 2019; Gordon et al., 2017, p. 310, p. 311; Van Elk et al., 2016, p. 11). According to Bethelmy and Corraliza (2019), the sublime "resembles" the feeling of awe (though at the same time they maintain that awe is a component of the sublime). But to date there appears to be very little empirical study and discussion explicitly devoted to the relationship between awe and the sublime (compare Pelowski et al., 2019).

### **Similarities Between the Sublime and Awe**

Because of the awe-sublime connections briefly mentioned by Keltner and Haidt (2003), we expected some relationship between awe and the sublime; however, because communication between theorists of the sublime and researchers of awe has been so minimal, we were unsure of how much overlap to expect. In this section, we note some primary differences and similarities between awe and the sublime according to contemporary theorists.

While McShane (2018) observes some similarities between awe and the sublime, she claims that the psychological conceptualization of awe lacks some features that some theorists have attributed to the sublime (p. 474). Unfortunately, she lists aspects that are disputed among rival theories of the sublime: fear or terror (Burke), awareness of the powers of reason (Kant), and "metaphysical presuppositions beyond what is necessary in perception" (McShane, 2018, p. 474). These controversial features are not essential to the conceptualization of the sublime. While the sublime and awe may be distinct, that distinction can be seen to lie elsewhere.

Shapshay (2019) agrees with McShane that awe and the sublime are distinct. She holds that awe is a response distinct from the sublime because the feeling of humility in awe (e.g., before a powerful leader) "need not involve actual aesthetic attention" (Shapshay, 2019, p. 330), whereas the sublime involves aesthetic attention. Especially if we accept Keltner and Haidt's (2003) conceptualization of awe, this is a convincing point, since awe appears to have aesthetic and non-aesthetic varieties.

Although awe and the sublime may be conceptually distinct, we expected, based on our overview of the most historically influential and/or conceptually



robust philosophical theories of the sublime, some overlap between the sublime and awe—even if our understanding of the sublime developed independently of our view of awe. We list seven points of similarity.

1. *Subjective states.* Generally, the sublime and awe can be conceived as subjective states. In the case of awe, this point seems obvious. It may appear less evident that the sublime can be a subjective state, but (as noted) it was quite common in the eighteenth century to view the sublime as a feeling and emotion, a point present even in Keltner and Haidt (2003) and Pelowski et al. (2019). Accordingly, the term “the sublime” can be applied to the subjective pole and is not reserved for the stimulus alone.
2. *Mixed valence.* Both awe and the sublime have been characterized as mixed valence experiences. That is, they involve a sense of being overwhelmed, which can present itself as a negative feeling, as well as a sense of positive uplift (Keltner & Haidt, 2003). Awe and the sublime are pleasant experiences overall—even if the sublime may perhaps contain a fear component as some conjecture. Most studies have treated awe as a positive emotion or a generally positively-valenced emotion (Chirico et al., 2016).
3. *Vastness and accommodation.* Awe and the sublime involve a perception of vastness and a need for accommodation. In philosophical theories, the sublime is a response to a great power or extent (vastness). This interaction with a great power or extent often relates to the negatively-valenced aspect of the sublime. Still, the person experiencing the sublime recovers from this—sometimes with an altered outlook. Chignell and Halteman (2012) even argue that the sublime contains an epiphany, a lasting change of perspective, which seems similar to accommodation as described in the awe literature.
4. *Self-loss and connectedness.* Awe involves a sense of sense of self-loss as well as feelings of connectedness or belonging (Piff et al., 2015; Yaden et al., 2017, 2019). According to theorists such as Schopenhauer (2019), these two elements are found in the sublime, too. A person undergoes a kind of self-loss, and thereby feels more connected to others or to the universe as a whole.
5. *Distancing.* Both awe and the sublime seem to involve aspects of spectatorship or observation (of great power or vastness), rather than active involvement and practical engagement with the observed object or event (Kant, 2019a; Schopenhauer, 2019). This idea has been expressed in terms of “psychological distancing mechanisms” and as part of a distancing-embracing model (Menninghaus et al., 2017). At the same time, the primarily perceptual-emotional experiences of the sublime and awe may have prosocial implications or social dimensions. For instance, in Schopenhauer’s (2019) theory, the sublime is associated with an increased sense of belonging to a greater whole and a corresponding sympathy with fellow beings and conspecifics. Analogously, research has demonstrated the positive impact of awe on

wellbeing (Rudd et al., 2012; Yaden et al., 2019), prosociality (Piff et al., 2015), and creativity (Chirico et al., 2018).

6. *Altered time perception.* Both awe and the sublime involve a sense that the perception of time has been altered. In the experience of awe, time appears to slow down (Rudd et al., 2012; Yaden et al., 2019). Meanwhile, Kant identifies an alteration of time perception in the sublime (Kant, 2019a). Likewise, Burke (2019) maintains that all the “motions” of the soul “are suspended” during the sublime (p. 80).
7. *Similar physiological responses.* Awe and the sublime have both been conceptualized as involving peculiar (and similar) bodily responses or physiological reactions (Shiota et al., 2011; Oveis et al., 2009; on the sublime, see Burke, 2019; Kant, 2019a, p. 123). Specifically, the psychological literature has extensively characterized awe’s psychophysiological profile (Chirico, Cipresso, et al., 2017; Chirico, Yaden, et al., 2017; Oveis et al., 2009; Shiota et al., 2011, 2017). Yaden et al. (2019) identified the eyes slightly widening, the jaw slightly dropping, gasping, goosebumps, and chills as physiological changes reportedly associated with awe. Analogously, inspired by Burke (2019), Ishizu and Zeki (2014) have examined the neural correlates of the sublime. Researchers have examined the sublime’s behavioral and physiological responses (Hur et al., 2020; Pelowski et al., 2019).

## The Present Study

This study examines the link between philosophical conceptualizations of the sublime and psychological measures of awe. We drew on influential and/or robust philosophical theories of the sublime to devise a number of questions related to subjective aspects of experiencing the sublime. We then tested the link between items tapping into the sublime and existing measures of awe. Our aim was to determine if and how philosophical conceptualizations of the sublime are related to contemporary psychological operationalizations of awe. We assumed high correlations between the items on the sublime and the awe scales, especially the Awe Experience Scale (AWE-S). We did so because when one looks at the prominent theories in the literature on the sublime, the sublime is characterized in a way that is very similar to how psychologists understand awe, but their link has not yet been tested.

## Methods

### Participants

Participants (N = 144) were adults (over 18) (72 females) with a mean age = 36.22; S.D. = 11.65, drawn from the United States. Participants were recruited through an online invitation to participate in the study on Amazon’s

Mechanical Turk (M-Turk). They were rewarded one US dollar for their participation. The Institutional Review Board at the University of Pennsylvania approved this study.

### Procedure

Participants were asked to remember and then write about a “a particular time, fairly recently, when you felt intense awe.” This method has been shown to be an effective way to elicit memories of emotion experiences (Aaker et al., 2008; Kučera & Haviger, 2012; Rudd et al., 2012). Participants responded to items generated based on the philosophical literature on the sublime. Participants then responded to a battery of three awe scales: the modified Differential Emotions Scale (*mDES*; Fredrickson et al., 2003), the Dispositional Positive Emotion Scale (*DPES*; Shiota et al., 2006), and the Awe-Experience Scale (*Awe-S*; Yaden et al., 2019). Following data collection, we performed Exploratory Factor Analysis on the items on the sublime and compared them with the awe scales.

Participants reported a variety of awe experiences, especially responses to natural wonders and scenery. But since some philosophical theories have questioned the ability of art and artifacts to elicit experiences of awe and the sublime, we here reproduce some reports (slightly adjusted for readability) of experiences that were triggered by artifacts, artistic performance, or technology.

“A few years ago, for my sixteenth birthday, my father took me to see the Mayan ruins at Tulum in Mexico. I have always wanted to go there every since I was young and was very excited to have been finally given the opportunity. After a long bus ride along the coast of the Yucatan peninsula, we finally arrived. At first, it was difficult to see anything because of the canopy. We then crossed through a small doorway in a wall that surrounded the ruins and out of the blue stood a rising group of pyramids. I was so impressed I just couldn’t stop staring. The fact that these structures were so old and built without modern tools made it all the more awe-inspiring. As we walked toward the coast, the pyramids looked simply amazing among the blue Caribbean water and the rocky cliffs. It was a truly amazing experience!” —Subject 78

“Last year, I got tickets to see my favorite artist, Beyoncé, in concert. I was really excited because I enjoy her music and performance so much. That night, as the lights dimmed and her music began, I experienced this wave of awe. Everything that I thought I would do and say when she appeared on that stage completely disappeared. It’s like she stole my breath and my train of thought when she came in. One thing I noticed about the awe that I experienced is that there are certain times when I can remember everything from what she had on, to the song that she

sang, to what the other people around me were doing, and then there are other times when I can only remember the feeling I experienced.” —Subject 66

“I recently went on a trip to Paris and ended up in Versailles. The gardens were longer and wider than I had ever seen. They were landscaped beautifully. Each area was a self-contained garden. Some with water statues, fountains, garden theaters. It was truly an awe-inspiring sight and visit. The palace itself was also room by room awe-inspiring including rooms full of mirrors let alone a room of entire mirrors.” —Subject 38

Figure 1 displays the various kinds of triggers of the reported awe experiences.

### *Items on the Sublime*

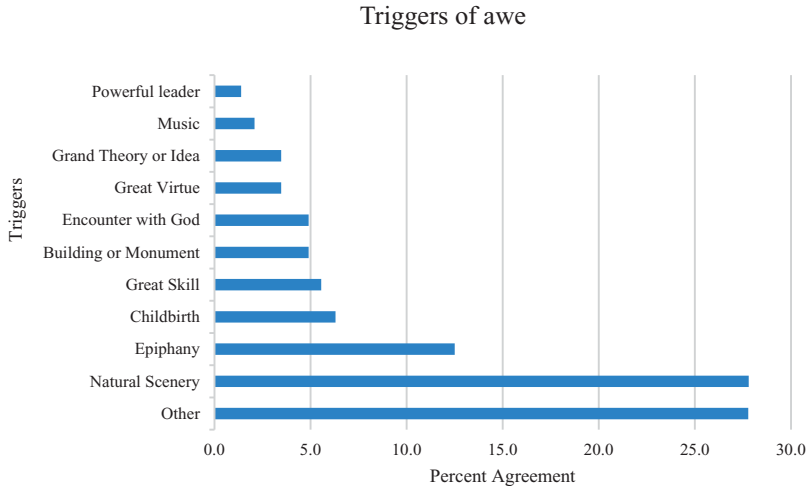
We generated 22 ad hoc items regarding the sublime based on a systematic review of influential theories of the sublime (see Table 2). We thus looked to the philosophical tradition as a reservoir of ideas inspiring empirical study (Hayn-Leichsenring & Chatterjee, 2019). Below, each item is described in terms of its most prominent appearance in the philosophical literature. Response scale was settled on a 5-point Likert scale ranging from “not at all” to “extremely.”

*Thoughts stop.* Philosophers have conjectured that the sublime experience contains a sense of the slowing of time (Burke, 2019, p. 80; Kant, 2019a). The item: “To what extent did you feel your thoughts temporarily stop?”

*Imagination engaged.* Several theorists think that the imagination is engaged in the experience of the sublime. For instance, Anna Aikin, William Wordsworth, Moses Mendelssohn, and Kant (Clewis, 2019a) emphasized the role of the imagination in sublime experiences. The item: “To what extent did you feel your imagination was engaged and active?”

*Imagination expanding.* Whereas the previous item asks if the imagination was engaged, this item addresses if the imagination was *expanded*, which is intended to capture a more intense involvement. An expanded imagination is a prominent theme in the history of the sublime and aesthetic responses to landscape (Brady, 2013; Clewis, 2019b; Hepburn, 1996; Kant, 2019a). The item: “To what extent did you feel that your imagination was expanded?”

*Pleasure from imagination expanding.* One of the central tasks for theorists of the sublime is to explain why it is pleasant rather than merely frustrating, upsetting, or frightening (Clewis, 2019b; Forsey, 2007). The role attributed to the imagination is prominent throughout the history of the sublime, and an expanded



**Figure 1.** Triggers of Awe.  $n = 144$ .

imagination is conjectured by modern and contemporary theorists to be a source of the pleasure (Brady, 2013; Clewis, 2019b, p. 349; Kant, 2019a). The item: “To what extent did you feel that the pleasure of your experience came from an expansion of your imagination?”

*Pleasure from expanded possibilities.* The imagination has been conceived as the ability to represent or conceive what is possible rather than actual (Chalmers, 2002; Gendler & Hawthorne, 2002; Kung, 2010; Yablo, 1993). Thus, asking about expanded possibilities offered a way to explore the imagination, and to potentially identify it as a source of the pleasure. The item: “To what extent did you feel that the pleasure of your experience came from an expanded sense of possibilities?”

*Ordinary is less significant.* Another likely source of a pleasure in the sublime is the rising above everyday affairs. When looked at from a distance and the greater scheme of things, ordinary endeavors seem relatively trivial during sublime experiences. As Kant put it, “In our aesthetic judgment nature is judged as sublime not insofar as it arouses fear, but rather because it calls forth our power . . . to regard those things about which we are concerned (goods, health and life) as trivial” (Kant, 2019a). In the sublime, the removal of this burden is experienced with satisfaction. The item: “To what extent did ordinary events seem less significant?”

*Feel more/less important.* Theorists of the sublime have debated whether the experience of the sublime involves a feeling of self-importance and self-admiration, or instead a sense of self-loss and insignificance. John Dennis offers what can be called an “admiration” theory of the sublime, where the mind has a “conscious view of its own excellency” (Clewis, 2019a, p. 62). In contrast, Schopenhauer (2019) emphasizes that the experience of the sublime involves a sense of a diminished self and self-loss (p. 195). The items: “To what extent did you feel more important during the experience?” and, “To what extent did you feel less important during the experience?”

*Role in the world.* A similar literature informs this item. Some theories maintain that the sublime experience must be reflexive and explicitly concern self-directed attention. Kant (2019a) and Dennis (2019) tend to be read as emphasizing that in the sublime one is thinking about oneself, rather than oriented toward the external world. The item: “To what extent did you think about your role in the world during your awe experience?”

*Lasting impact.* Most of the philosophical literature tends to think of the sublime as an affective experience without theorizing its lasting effects (Clewis, 2019b; Shapshay, 2019). However, Chignell and Halteman (2012) argue that the sublime, after an initial bedazzlement and cognitive outstripping, contains a lasting change of perspective. Such epiphany is similar to the life changing, transformative experience described by empirical researchers (Bethelmy & Corraliza, 2019; Chirico & Yaden, 2018). The item: “To what extent do you think this experience will leave a lasting impact on your life and attitudes?”

*Feeling of belonging.* One of the sources of the pleasure in the sublime is a sense of belonging or connectedness. Schopenhauer writes: “we are one with the world and are therefore not oppressed but exalted by its immensity” (Schopenhauer, 2019, p. 197). For Kant (2019a), a related sense of belonging can come from finding one’s place in the moral order. The item: “To what extent did you feel a sense of belonging during your awe experience?”

*Part of something bigger.* We formulated items referring to feeling a part of something larger than the self. Whereas the previous item is a feeling of belonging as such, this is being a part of something greater than oneself. As with the previous item, the literature from Schopenhauer (2019) informs this item. The item: “To what extent did you feel like you were part of something ‘bigger’?”

*Goodness towards others.* This item examines the possibility of a prosocial impact of the sublime and disposition to feel goodness toward fellow human beings. The theories of Kant (2019a) and Schopenhauer (2019) indirectly inspired this item; there is also similar work on the prosocial impact of awe (Piff et al., 2015).

The item: “To what extent did you have a feeling of goodness toward others during your awe experience?”

*Goodness to the world.* Developing the previous item, we explored whether prosocial attitudes could be extended to the world in general and not just to fellow human beings. This item was indirectly inspired by the theories of Kant (2019a) and Schopenhauer (2019). The item: “During your awe experience, to what extent did you have a feeling of goodness toward the world?”

*Self-awareness of the experience.* As noted, the degree and content of self-awareness during sublime experiences is controversial (Dennis, 2019; Kant, 2019a). These theories led us to ask about self-awareness during the experience. The item: “To what extent were you aware that the experience was one of ‘awe’ as it was happening?”

*Experience was meaningful/meaningless.* As noted, the sublime has sometimes been conceived as involving a lasting change of perspective (Chignell & Halteman, 2012). Therefore, two items developed to measure this dimension are “To what extent was the feeling meaningful?” and “To what extent was the feeling meaningless?”

*Removed from affairs.* Like the item, this item derives from Kant (2019a) and Schopenhauer (2019). It refers to the pleasure originating from rising above everyday concerns or affairs. The item: “To what extent did you feel removed from the world of everyday affairs?”

*Elevated above affairs.* Like the previous item, this item offered another way to address rising above ordinary concerns. While, according to Kant (2019a) not all experiences of elevation are sublime experiences, all experiences of the sublime are also experiences of elevation. The item: “To what extent did you feel elevated above the world of everyday affairs?”

*Pleasure of being elevated above affairs.* Although this item is similar to the previous two items and is informed by a similar literature, it goes beyond it by exploring whether *pleasure* is derived from detachment from ordinary concerns. Some theorists (Dennis, 2019) have described sublime experiences as necessarily containing an *identification* of the source of the pleasure. The item: “To what extent did you feel that the pleasure of the experience came from being elevated above the world of everyday affairs?”

## Instruments

*The Modified Differential Emotions Scale.* The modified Differential Emotions Scale (*mDES*; Fredrickson et al., 2003). This scale includes a series of items asking participants to indicate the degree to which they experienced a number of different emotions. Fredrickson integrated the original Differential Emotions Scale (*DES*) with eight additional discrete positive emotions: amusement, awe, contentment, gratitude, hope, love, pride, and sexual desire, plus an item on sympathy. Each emotion is represented as a group of three related emotions belonging to the same family, for instance, “awe” is presented along with “wonder” and “amazement.” Twenty other emotion trios were also administered, such as “stressed, nervous, overwhelmed.” Items were administered on a 5-point Likert scale ranging from “Not at All” to “Extremely.”

The score can also be computed into two main sub-scales of Positive and Negative Emotions. The Positive Emotions sub-scale consists in nine positive emotions (awe excluded), with Cronbach’s  $\alpha = 0.79$ . The Negative Emotions sub-scale is composed of 7 negative emotions (embarrassment excluded), with Cronbach’s  $\alpha = 0.69$ . Here, to address the research question on the link between awe and the sublime, we focused on the awe emotion trio. Instructions were adapted in order to specify that the emotions were intended to refer to the awe experience that participants wrote about.

*The Dispositional Positive Emotion Scale (DPES).* This trait scale (Shiota et al., 2006) measures one’s general tendency to experience various positive emotions including awe. The sub-scale on awe was administered, which includes items such as “I often feel awe.” Items were administered on a 7-point Likert scale ranging from “Strongly Disagree” to “Strongly Agree.” The scale was included as another validated instrument to assess awe as a trait. It did not relate directly to an awe-inspiring *event*; rather, with *mDES* and *Awe-S*, it provided a further measure of the convergence of awe.

*The Awe Experience Scale (AWE-S).* This 30-item state measure of awe captures a number of different aspects of the awe experience (Yaden et al., 2019), including: the perception of vastness (“I experienced something greater than myself”), need for accommodation (“I struggled to take in all that I was experiencing at once”), feelings of connectedness (“I felt the sense of being connected to everything”), sense of self-loss (“I felt that my sense of self was diminished”), alteration of the sense of time (“I experience the passage of time differently”), and physiological reactions (“I had chills”). Preliminary studies reported a scale total Cronbach Alpha of .92 and  $> .80$  for all sub-scales (Yaden et al., 2019).

*Ad hoc Items on Awe.* We developed three more ad hoc single items to measure the a) valence, b) intensity, and c) self-transcendent nature of the experience of



awe. Self-transcendent experiences are defined as mental states marked by reduced focus on the self and increased sense of connectedness (Yaden et al., 2017). These items were:

“Please, report how positive was your experience of awe.” (7-point Likert)

“How intense was your experience of awe?” (5-point Likert)

“Would you consider your experience of awe a kind of ‘self-transcendent experience?’” (5-point Likert)

We chose a 7-point Likert scale to capture the granularity of awe’s valence, which is a crucial issue in awe research (see Chirico et al., 2016; Gordon et al., 2017). Indeed, several participants answered 1 or 7 concerning awe valence, suggesting that a Likert with more points would better capture the variability of this experience.

*Items on the Sublime.* The 22 items were created in order to reflect the various dimensions of the sublime as it has been formulated by prominent theories in the philosophical tradition, chosen for being historically influential or conceptually robust (or both), as noted above.

## Results

### *Data Analysis*

First, we carried out Pearson’s correlations between AWE-S total and six factors, DPES awe sub-scale, the *mDES* awe item, our three ad hoc awe items, and our items on the sublime. Next, the focus was on exploring the factor structure of the developed items on the sublime by carrying out an Exploratory Factor Analysis (EFA). Finally, we computed final Factors scores and their internal correlations as well as internal consistency of each scale (Cronbach Alpha). Lastly, we computed Pearson’s correlations to calculate convergent validity between Sublime Factor scores, AWE-S total, AWE-S six factors, *mDES* awe item, and DPES awe sub-scale.

### *Awe Scales and Items on the Sublime*

In Table 3, we reported Pearson’s correlation coefficients for all items on the sublime and each awe scale. The awe scales behaved generally as predicted. The AWE-S showed a moderate level of correlation with the DPES awe sub-scale, and a moderate level of correlation with the *mDES* awe item. The AWE-S total and sub-scale scores as well as the DPES showed adequate reliability. The moderate degree of correlation between these measures agrees with previous comparisons (Yaden et al., 2019).

The items on the sublime showed a general pattern of slightly stronger correlations with the AWE-S than with the *mDES* awe item or the DPES awe

**Table 3.** Pearson's Correlations Between Awe-S Total and Six Factors, DPES Awe Sub-Scale, and mDES Awe Item.

	AWE-S total	mDES awe item	DPES awe sub-scale
AWE-S total	1	.33**	.33**
DPES awe sub-scale	.33**	0.06	1
mDES awe item	.33**	1	0.06
AWE-S vastness	.73**	.49**	.25**
AWE-S accommodation	.72**	.18*	.27**
AWE-S self-loss	.73**	.18*	0.04
AWE-S connectedness	.66**	.18*	.41**
AWE-S time	.79**	.26**	.32**
AWE-S physical sensations	.64**	0.16	0.16

Note. N = 144; \*\* =  $p < .01$ , \* =  $p < .05$ .

**Table 4.** Pearson's Correlations Between Awe-S Total, mDES Awe Item, DPES Awe Sub-Scale, Three Ad Hoc Awe Items, and Items on the Sublime.

	AWE-S total	mDES awe item	DPES awe sub-scale
Valence	.09	.52**	.05
Intensity	.54**	.40**	.24**
Self-transcendent experience	.49**	.05	.23**
Sublime role in the world	.49**	.06	.31**
Sublime feeling belonging	.38**	.20*	.27**
Sublime part of something bigger	.51**	.28**	.38**
Sublime goodness to others	.33**	.36**	.29**
Sublime goodness to world	.46**	.43**	.17*
Sublime self-awareness of the experience	.35**	.46**	.18*
Sublime meaningful experience	.46**	.41**	.22**
Sublime meaningless experience	.00	-.25**	-.04
Sublime removed from affairs	.39**	.18*	.12
Sublime elevated above affairs	.59**	.19*	.16*
Sublime pleasure from elevation	.52**	.24**	.27**
Sublime thoughts stop	.49**	.02	.08
Sublime imagination expands	.49**	.27**	.21*
Sublime pleasure expanded imagination	.41**	.23**	.18*
Sublime pleasure expanded possibilities	.35**	.20*	.32**
Sublime ordinary less significant	.55**	.11	.06
Self more important	.27**	-.03	.33**
Self less important	.43**	-.07	-.04
Sublime lasting impact	.43**	.28**	.21*
Sublime imagination engaged	.29**	.15	.25**
Sublime imagination expanded	-.30**	-.10	-.16

Note. N = 144; \*\* =  $p < .01$ , \* =  $p < .05$ .

sub-scale (Table 4). The valence item was strongly positively associated with the *mDES* awe item but not related to the AWE-S, whereas the self-transcendence item (marked by reduced focus on the self and increased sense of connectedness) was strongly associated with the AWE-S but not related to the *mDES* awe item. This suggests that the *mDES* awe item may be interpreted as more of a positive emotion measure, while the AWE-S might be interpreted as more of a self-transcendent experience measure. It appears that the items on the sublime are substantially more related to the AWE-S.

### *A Focus on Awe-S Dimensions and Items on the Sublime*

We examined in detail each of the six Awe-S factors and our items on the sublime (Table 5). We observed a general pattern of moderate to strong correlations between the items on the sublime and the AWE-S factors, as we had expected. The connectedness factor demonstrated the highest correlations with the items on the sublime; this was followed by the altered sense of time and vastness factors. The highest correlations can be found between the sublime items and the Awe-S global score, compared to the *mDES* and DPES awe sub-scale. This result provided evidence that the more comprehensive measure of awe showed a higher degree of overlap with the sublime items compared to the single item of *mDES* and the dispositional measure of awe (DPES).

### *Factor Analysis of the Items on the Sublime*

*Exploratory Factor Analysis.* A Parallel analysis (PA; Horn, 1965) and Scree tests (Cattell, 1966) were conducted to determine the most suitable number of factors to be extracted. Then, we chose an oblique rotation assuming that factors would be highly positively correlated. The assumption was not fulfilled, and items did not load clearly in any factor, so we instead opted for a varimax rotation. Then, we used Kaiser–Guttman ‘Eigenvalues greater than one’ criterion (Guttman, 1954; Kaiser, 1974) and the Scree test (Cattell, 1966) to estimate the number of factors to obtain an adequate factor solution (Figure 2).

Parallel analysis (Table 6) also suggested a 4-factor solution and the Eigenvalue  $> 1$  suggested a 4-factor solution that explained 59.239% of the variance. We carried out an EFA with oblimin (Delta = 0) solution with principal axis factoring with a 4-factor solution, assuming that factors would be highly correlated. However, factors were not strongly correlated (correlations among factors ranged from .002 to .37) and the fourth factor included two double-loading items, which were removed. This left only one item in the fourth factor, so this factor was deemed an error factor and dropped. Therefore, we chose the 3-factor solution with a principal axis factoring method and a Varimax rotation due to the orthogonal structure of the factor inter-correlations. This solution explained 52.09% variance. However, six items showed the lowest communality and did not load clearly in either factor. Therefore, we ran again EFA with

**Table 5.** Pearson's Correlations Between Six Awe-S Factors, Three Ad Hoc Awe Items, and Ad Hoc Items on the Sublime.

	AWE-S vastness	AWE-S accommodation	AWE-S self-loss	AWE-S connectedness	AWE-S time	AWE-S physical sensations
Valence	.34**	-.03	-.02	.11	.02	-.02
Intensity	.44**	.38**	.30**	.35**	.44**	.42**
Self-transcendent experience	.293**	.310**	.349**	.475**	.348**	.293**
Sublime role in the world	.24**	.32**	.39**	.54**	.32**	.24**
Sublime feeling belonging	.14	.18*	.06	.64**	.27**	.32**
Sublime part something bigger	.46**	.35**	.25**	.54**	.31**	.25**
Sublime goodness to others	.29**	.17*	.10	.49**	.18*	.21*
Sublime goodness to world	.41**	.20*	.27**	.56**	.30**	.24**
Sublime self-awareness of the experience	.37**	.20*	.21*	.25**	.30**	.18*
Sublime meaningful experience	.50**	.28**	.23**	.36**	.39**	.24**
Sublime meaningless experience	-.16	-.00	.05	.01	.08	.02
Sublime removed from affairs	.36**	.27**	.32**	.22**	.38**	.11
Sublime elevated from affairs	.46**	.31**	.47**	.45**	.49**	.33**
Sublime pleasure from elevation	.39**	.24**	.40**	.51**	.38**	.31**
Sublime thoughts stop	.23**	.31**	.41**	.26**	.49**	.38**
Sublime imagination expands	.41**	.34**	.22**	.38**	.45**	.32**
Sublime pleasure expanded imagination	.26**	.31**	.16*	.46**	.27**	.29**
Sublime pleasure expanded possibilities	.27**	.28**	.04	.35**	.29**	.34**
Sublime ordinary less significant	.44**	.34**	.49**	.32**	.50**	.24**
Self more important	.08	.12	.04	.43**	.28**	.21*
Self less important	.27**	.36**	.49**	.18*	.30**	.18*
Sublime lasting impact	.41**	.34**	.17*	.31**	.34**	.32**
Sublime imagination engaged	.18*	.30**	.13	.23**	.25**	.12
Sublime imagination expanded	-.24**	-.19*	-.16	-.29**	-.16	-.27**

Note. N = 144; \*\* =  $p < .01$ , \* =  $p < .05$ .

Principal Axis Factoring and Varimax rotation, excluding progressively the six items. This procedure led to a better solution, explaining 60.853% variance. We deleted a final item that double loaded in two factors, and we carried out the analyses again. This procedure led to a better solution, explaining 61.370% variance (see Table 7 for the final factor solution).

Cronbach Alpha for the first factor *Belonging* (M=18.41, SD = 4.7) was .86; the second factor *Raised above Affairs* (M = 15.89, SD = 4.9) showed an internal consistency of .82, and *Imagination* (M=13.8, SD = 3.9) of .81. The general Cronbach Alpha for the items concerning the sublime was .90. *Factors' scores were computed as means* (see Table 8). *Means and SD for each Factor distribution are reported.* The “Belonging” scale ranged from 6 to 30. “Raised above Affairs”

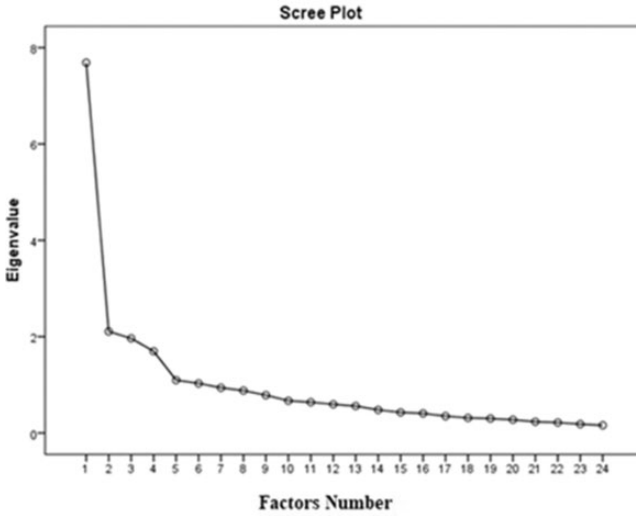


Figure 2. Scree plot.

Table 6. Results of the Parallel Analysis.

Factor	Eigenvalues	Average eigenvalues	95th percentile eigenvalue
1	7.27	1.02	1.17
2	1.63	0.86	0.98
3	1.48	0.75	0.85
4	<b>1.16</b>	<b>0.66</b>	<b>0.75</b>
5	0.57	0.57	0.65

Note. The retained number of factors are in bold.

ranged from 5 to 25. “Imagination” ranged from 4 to 20. Correlations between Factors of the Sublime and the AWE-S Total, AWE-S Six Factors, mDES Awe Item, and DPES Awe Sub-Scale were reported in Table 9.

## Discussion

We sought to examine the intersections between the sublime and awe using empirical methods, while building on the philosophical and psychological literature’s understandings of the two phenomena. We found that most of the items related to the sublime correlated more strongly with the AWE-S than with the other measures of awe. This suggests that the psychological literature on awe is

**Table 7.** Factor Loadings of the Final 3-Factor Solution.

Items	Belonging	Raised above affairs	Imagination
To what extent did you feel a sense of belonging during your awe experience?	<b>.67</b>	.08	.29
To what extent did you feel like you were part of something 'bigger'?	<b>.57</b>	.30	.38
To what extent did you have a feeling of goodness toward others during your awe experience?	<b>.89</b>	-.01	.18
During your awe experience, to what extent did you have a feeling of goodness toward the world?	<b>.67</b>	.27	.26
To what extent was the feeling meaningful?	<b>.64</b>	.25	.20
To what extent do you think this experience will leave a lasting impact on your life and attitudes?	<b>.42</b>	.23	.37
To what extent did you feel removed from the world of everyday affairs?	.20	<b>.61</b>	.07
To what extent did you feel elevated above the world of everyday affairs?	.38	<b>.76</b>	.10
To what extent did you feel your thoughts temporarily stop?	.16	<b>.44</b>	.19
To what extent did ordinary events seem less significant?	.12	<b>.74</b>	.15
To what extent did you feel less important during the experience?	-.09	<b>.53</b>	.17
To what extent did you feel that your imagination was expanded?	.20	.30	<b>.71</b>
To what extent did you feel that the pleasure of your experience came from an expansion of your imagination?	.29	.17	<b>.77</b>
To what extent did you feel that the pleasure of your experience came from an expanded sense of possibilities?	.31	.11	<b>.60</b>
To what extent did you feel your imagination was engaged and active?	.17	.11	<b>.61</b>

Note.  $n = 144$ . Extraction Method: Principal Axis Factoring. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 5 iterations. Item loadings for each factor are in bold. Loadings less than .40 are not shown.

highly relevant to the philosophical literature on the sublime, and that some operationalizations of awe are more related to the sublime than others.

When the items on the sublime were factor analyzed, three dimensions emerged, which we label: 1) Belonging, 2) Rising Above, and 3) Imagination. This empirically-based finding could provide some further insight into the

**Table 8.** Correlational Matrix of Factors of the Sublime.

	Belonging (F1)	Raised above affairs (F2)	Imagination (F3)
Belonging (F1)	1	.47**	.57**
Raised above Affairs (F2)	.47**	1	.43**
Imagination (F3)	.57**	.43**	1

Note. N = 144; \*\* =  $p < .01$ , \* =  $p < .05$ .

**Table 9.** Correlational Matrix of Factors of the Sublime, With AWE-S Total and AWE-S Six Factors, mDES Awe Item, and DPES Awe Sub-Scale.

	Belonging (F1)	Raised above affairs (F2)	Imagination (F3)
AWE-S total	.53**	.66**	.48**
DPES awe	.34**	0.15	.30**
mDES awe item	.42**	.16*	.26**
AWE-S vastness	.44**	.51**	.35**
AWE-S accommodation	.29**	.41**	.38**
AWE-S self-loss	.22**	.58**	.17*
AWE-S connectedness	.64**	.44**	.44**
AWE-S time	.35**	.55**	.39**
AWE-S physical sensations	.31**	.31**	.34**

Note. N = 144; \*\* =  $p < .01$ , \* =  $p < .05$ .

structure of the sublime. As noted in the explanations of each of the items, these three empirically-driven dimensions coincide with some of the philosophical literature on the sublime and main tenets of philosophical theories of the sublime (Clewis, 2019b).

A “Belonging” dimension of the sublime was proposed by Kant (2019a) and Schopenhauer (2019). This dimension pertains to the main self-transcendent component of awe, “connectedness,” a feeling of becoming one with something beyond the self (Yaden et al., 2017).

Elevation above or detachment from the mundane was emphasized by Longinus (2019), Kant (2019a), and Schopenhauer (2019). The dimension of “Rising” (or being Raised) above Affairs is close to the “loss of self” component in the self-transcendence studied by Yaden et al. (2017) and Chirico and Yaden (2018). It also resonates with the work of Stellar et al. (2015), in which the disposition to experience awe was associated with lower levels of chronic stress.

Finally, the factor “Imagination” corresponds to the emphasis on expanded imagination found in many theories of the sublime. The imagination has been conceived as the mental capacity for thinking about the possible and what is not present (Kant, 2019a; Kung, 2010). Kant highlights the activation and expansion of the imagination during the sublime. Items making up this last factor,

“Imagination,” generally referred to thinking about many different possibilities, both present and future. For this reason, one could also refer to the “Imagination” item by introducing the phrase “sense of possibility.” The psychological literature on awe has only hinted at this aspect (e.g., Rudd et al., 2012).

The AWE-S appears to be a strong approximation of the sublime as conceptualized in the philosophical literature. All six factors of the AWE-S can be found in the sublime as conceived by prominent philosophical theories. Perceived *vastness* is discussed by nearly all theories of the sublime, and the theorists identify vastness as a trigger of sublime experiences. A need for *accommodation* was proposed (using other terms) by Kant (2019a) and Schopenhauer (2019), who saw the sublime as yielding new perspectives and insights about the world. *Altered time perception* was noted by Burke (2019) and Kant (2019a). *Self-diminishment* was put forward by Schopenhauer (2019). A sense of *connectedness* was also noted by Schopenhauer. *Physical sensations* were vividly described by Burke (2019).

The general pattern of findings suggests that the experience of the sublime may be accurately described as a “variety of self-transcendent experience” (Yaden et al., 2017) insofar as it is marked by reduced focus on the self and an increased sense of connectedness. The AWE-S includes these aspects as factors—the “self-loss” factor and the “connectedness” factor—which were highly correlated with our items on the sublime. Furthermore, the high correlation between the AWE-S item asking whether participants would characterize their experience as “self-transcendent” provides evidence for this supposition. Our finding is also close to the view of Bethelmy and Corraliza (2019), who call the sublime a “transcendent emotion.”

Philosophers have observed that there is a puzzle regarding how the experience of the sublime can be pleasant and satisfying rather than unsettling (Clewis 2019a; Forsey, 2007). Our study suggests a possible clue as to why engaging with a potentially threatening large or powerful object does not simply upset experiencers of the sublime. While at this stage the following conjecture is only speculative, the pleasure in the sublime could come from the dimensions we identified: a sense of 1) Belonging (connectedness), 2) Rising above the mundane, and/or the 3) expansion of Imagination (or sense of possibility). These might be pleasant, respectively, insofar as someone finds his or her place in a larger scheme; a *release* from troublesome burdens is itself satisfying; and, finally, the activation of a core mental capacity brings pleasure.

Keltner and Haidt (2003) refer to the sublime as an *awe-like* aesthetic emotion (p. 299). Konečni (2005, 2011) develops this point and suggestively uses the term “aesthetic awe.” Conceiving of the sublime as a mode of awe is, perhaps, a compelling way to reconcile and explain some of the differences between awe in general and the sublime. For if the sublime is only a kind of awe (Arcangeli et al., 2020), the sublime cannot simply be identified with awe. The



differentiation was also shown by our expert-based developed items, since the sublime items and the awe dimensions did not show high correlations at the psychometric level. While we have made some headway into exploring the nature of the awe-sublime relation, their precise relationship deserves more conceptual analysis and empirical study.

## Limitations and Future Directions

Despite our rigorous methodology, this study has some limitations. First, this is a preliminary study, an attempt to test a linear link between two complex phenomena. To this end, we asked participants to describe an experience of “awe,” which may have biased their responses in certain ways. The terminology in this conceptual territory is particularly difficult, as researchers must prompt respondents in some way, which usually involves a choice regarding the terminology used. Here, the prompt specifies “awe,” but future research might prompt participants in terms of the “sublime,” or otherwise describe a subjective state, and examine how the results differ, as a cross-check. Moreover, it would be also useful to investigate if the link between awe and the experience of the sublime still obtains when participants are prompted with a scientific definition of awe and the sublime rather than just the single word “awe” or “sublime.”

The operationalization of the sublime we chose offers several advantages. First, it permits the description of the sublime in relation to a well-established philosophical literature. Second, it enables investigating the sublime by way of empirical methods. Third, it simplifies the long-lasting debate on this phenomenon by providing preliminary evidence about its link with awe, which had either been simply conflated with the sublime, or thought to be a component of the sublime, or was discussed independently of the sublime.

To be sure, like all operationalizations, the present one naturally has certain limitations. First, we explicitly drew from a specific, non-exhaustive philosophical literature on the sublime in order to inform our operationalization of the sublime. Nevertheless, we aimed to be reflective and self-aware in making our selection. In particular, we included representative authors whose ideas about the sublime are significant and theoretically robust, or historically influential, or both. They were selected because their theories addressed the key elements of a theory of the sublime and were useful in operationalizing the sublime.

At the same time, we had to exclude several authors. Accordingly, future studies could provide other operational definitions of the sublime drawing from other philosophers and test them empirically as we did, to obtain a more comprehensive picture of this phenomenon.

Moreover, in this study we relied on the theoretical underpinnings of awe and of the sublime and did not directly ask our participants to provide their definition of the two constructs. In other words, we drew from scientific and philosophical literature rather than from the mundane, ordinary understandings of

awe and the sublime. In addition, our operationalization does not account for how responses might vary across different global cultures.

The study used a relatively small sample recruited by means of m-Turk platform, which might not be broadly generalizable. Nevertheless, studies have shown that M-Turk samples are generally representative (Buhrmester, 2011). In any case, future studies might examine samples gathered in other ways. One compelling possibility would be to sample individuals with theoretical expertise regarding the sublime, such as professional philosophers and aestheticians, in order to examine how intuitions differ between philosophers and non-philosophers, or between “experts” and non-experts. Similar methods have been employed in other areas of philosophy (e.g., Nahmias et al., 2005).

Future studies should be conducted to replicate these findings and to confirm the factor structure of the exploratory factor analysis conducted on the items on the sublime. The items on the sublime were drawn from key theories in the philosophical literature, and primacy was given to the content validity rather than the psychometric properties. We chose not to use Bonferroni (or other) corrections. More validation work is required before these items can be recommended for broader use.

Future conceptual analysis and empirical research can illuminate the intersections between awe and the sublime. Some of the questions raised by philosophers lend themselves to empirical research; in turn, such empirical investigations could be fruitfully guided by engaging with the philosophical literature. For instance, the following topics merit further exploration. 1) How effectively the experience of the sublime can be elicited by artworks or artifacts rather than by landscape and natural scenery (Pelowski et al., 2019). 2) The extent to which the experiences of the sublime and related emotions appear to be cross-cultural (Razavi et al., 2016; Zickfeld et al., 2019). 3) The extent to which the experience is reflexive and explicitly *self-directed* even as it is an experience of *self-loss*, two notions that seem to be often confused in the psychological literature (e.g., Sundararajan, 2002).

## Conclusion

This study tested the link between several awe measures and items on the sublime inspired by prominent theories in the philosophical literature. We can conclude with two broad points. First, the sublime and awe are strongly correlated. Specifically, the sublime shows high correlation to awe as measured by the AWE-S. Second, this paper builds a bridge between the psychology of awe and the philosophy of the sublime, allowing access to a literature of which specialists from one of the fields may be unaware. Psychologists interested in awe could profitably learn from the philosophical literature on the sublime as well as from our items on the sublime. The benefit also flows in the other

direction. Bearing in mind how close awe is to the sublime, philosophers can learn from the empirical awe literature in their analyses of the sublime.


### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

### ORCID iD

Robert R. Clewis  <https://orcid.org/0000-0003-1591-3139>

### References

- Aaker, J., Drolet, A., & Griffin, D. (2008). Recalling mixed emotions. *Journal of Consumer Research*, 35(2), 268–278.
- Aquinas, T. (1947–1948). *Summa theologiae* (Vol. 4). Benzinger Brothers.
- Arcangeli, M., Sperduti, M., Jacquot, A., Piolino, P., & Dokic, J. (2020). Awe and the experience of the sublime: A complex relationship. *Frontiers in Psychology*, 11.
- Augustine. (1961). *Confessions* (R. S. Pine-Coffin, trans.). Penguin.
- Bethelmy, L., & Corraliza, J. (2019). “Transcendence and Sublime Experience in Nature: Awe and Inspiring Energy.” *Frontiers in Psychology*, 10, 509.
- Bonner, E., & Friedman, H. (2011). A conceptual clarification of the experience of awe: an interpretative phenomenological analysis. *The Humanistic Psychologist*, 39(3), 222–235.
- Burke, E. (2019). From a philosophical enquiry into the origin of our ideas of the sublime and beautiful. In R. R. Clewis (Ed.), *The sublime reader* (pp. 79–89). Bloomsbury.
- Brady, E. (2013). *The sublime in modern philosophy: Aesthetics, ethics, and nature*. Cambridge University Press.
- Brady, E. (2019). The environmental sublime. In R. R. Clewis (Ed.), *The sublime reader* (pp. 355–364). [Originally published in T. Costelloe (Ed.), *The sublime: From antiquity to the present* (pp. 171–182). Cambridge University Press, 2012]
- Buhrmester, M., Kwang, T., & Gosling, S. (2011). Amazon’s mechanical turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science*, 6(1), 3–5.
- Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research*, 1, 245–276.
- Chalmers, D. J. (2002). Does conceivability entail possibility? In T. Szabó Gendler & J. Hawthorne (Eds.), *Conceivability and possibility* (pp. 145–200). Oxford University Press.
- Chignell, A., & Halteman, M. C. (2012). Religion and the sublime. In T. Costelloe (Ed.), *The sublime: From antiquity to present* (pp. 183–202). Cambridge University Press.

- Chirico, A., & Yaden, D. (2018). Awe: A self-transcendent and sometimes transformative emotion. In H. Lench (Ed.), *The function of emotions* (pp. 221–233). Springer.
- Chirico, A., Yaden, D., Riva, G., & Gaggioli, A. (2016). The potential of virtual reality for the investigation of awe. *Frontiers in Psychology*, 09.
- Chirico, A., Cipresso, P., Yaden, D. B., Biassoni, F., Riva, G., & Gaggioli, A. (2017). Effectiveness of immersive videos in inducing awe: an experimental study. *Scientific Reports*, 7(1), 1–11.
- Chirico, A., Glaveanu, V. P., Cipresso, P., Riva, G., & Gaggioli, A. (2018). Awe enhances creative thinking: an experimental study. *Creativity Research Journal*, 30(2), 123–131.
- Clewis, R. R. (Ed.) (2019a). *The sublime reader*. Bloomsbury.
- Clewis, R. R. (2019b). Towards a theory of the sublime and aesthetic awe. In R. R. Clewis (Ed.), *The sublime reader* (pp. 340–353). Bloomsbury.
- Costelloe, T. M. (2012). *The sublime: From antiquity to the present*. Cambridge University Press.
- Cotter, K. N., Prince, A. N., Christensen, A. P., & Silvia, P. J. (2019). Feeling like crying when listening to music: Exploring musical and contextual features. *Empirical Studies of the Arts*, 37(2), 119–137.
- Dennis, J. (2019). From The Grounds of Criticism in Poetry. In R. R. Clewis (Ed.), *The sublime reader* (pp. 63–67). Bloomsbury.
- Eskine, K. J., Kacirik, N. A., & Prinz, J. J. (2012). Stirring images: Fear, not happiness or arousal, makes art more sublime. *Emotion*, 12, 1071–1074.
- Fredrickson, B. L., Tugade, M. M., Waugh, C. E., & Larkin, G. R. (2003). What good are positive emotions in crisis? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001. *Journal of Personality and Social Psychology*, 84(2), 365.
- Forsey, J. (2007). Is a theory of the sublime possible? *Journal of Aesthetics and Art Criticism*, 65(4), 381–389.
- Gendler, T. S., & Hawthorne, J. (Eds.) (2002). *Conceivability and possibility*. Oxford University Press.
- Gordon, A. M., Stellar, J. E., Anderson, C. L., McNeil, G. D., Lowe, D., & Keltner, D. (2017). The dark side of the sublime: Distinguishing a threat-based variant of awe. *Journal of Personality and Social Psychology*, 113, 310–328.
- Guttman, L. (1954). Some necessary conditions for common-factor analysis. *Psychometrika*, 19, 149–161. doi:10.1007/BF02289162
- Hayn-Leichsenring, G. U., & Chatterjee, A. (2019). Colliding terminological systems—Immanuel Kant and contemporary empirical aesthetics. *Empirical Studies of the Arts*, 37(2), 197–219.
- Hegel, G. W. F. (2019). Symbolism of the sublime. In R. R. Clewis (Ed.), *The sublime reader* (pp. 200–211). Bloomsbury.
- Hepburn, R. W. (1996). Landscape and metaphysical imagination. *Environmental Values*, 5, 191–204.
- Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika*, 30, 179–185.
- Hur, Y.-J., Gerger, G., Leder, H., & McManus, I. C. (2020). Facing the sublime: Physiological correlates of the relationship between fear and the sublime. *Psychology of Aesthetics, Creativity, and the Arts*, 14(3), 253–263.

- Ishizu, T., & Zeki, S. (2014). A neurobiological enquiry into the origins of our experience of the sublime and beautiful. *Frontiers in Human Neuroscience*, *8*, 1–10.
- Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, *39*(1), 31–36.
- Kant, I. (2019a). Analytic of the sublime. In R. R. Clewis (Ed.), *The sublime reader* (pp. 123–146). Bloomsbury.
- Kant, I. (2019b). Observations on the feeling of the beautiful and sublime. In R. R. Clewis (Ed.), *The sublime reader* (pp. 105–112). Bloomsbury.
- Keltner, D., & Haidt, J. (2003). Approaching awe, a moral, spiritual, and aesthetic emotion. *Cognition & Emotion*, *17*(2), 297–314.
- Kirwan, J. (2005). *Sublimity: The non-rational and the irrational in the history of aesthetics*. Routledge.
- Konečni, V. (2011). Aesthetic trinity theory and the sublime. *Philosophy Today*, *55*(1), 64–73.
- Konečni, V. (2005). The aesthetic trinity: Awe, being moved, thrills. *Bulletin of Psychology and the Arts*, *5*, 27–44.
- Kučera, D., & Haviger, J. (2012). Using mood induction procedures in psychological research. *Procedia—Social and Behavioral Sciences*, *69*, 31–40.
- Kung, P. (2010). Imagining as a guide to possibility. *Philosophy and Phenomenological Research*, *81*(3), 621–663.
- Longinus. (2019). On the sublime. In R. R. Clewis (Ed.), *The sublime reader* (pp. 17–30). Bloomsbury.
- Mcshane, K. (2018). The role of awe in environmental ethics. *Journal of Aesthetics and Art Criticism*, *76*(4), 473–484.
- Menninghaus, W., Wagner, V., Hanich, J., Wassiliwizky, E., Jacobsen, T., & Koelsch, S. (2017). The distancing-embracing model of the enjoyment of negative emotions in art reception. *Behavioral and Brain Sciences*, *20*, 2–58.
- Nahmias, E., Morris, S., Nadelhoffer, T., & Turner, J. (2005). Surveying freedom: Folk intuitions about free will and moral responsibility. *Philosophical Psychology*, *18*(5), 561–584.
- Ortlieb, S. A., Fischer, U. C., & Carbon C. C. (2016). Enquiry into the origin of our ideas of the sublime and beautiful: Is there a male gaze in empirical aesthetics? *Art & Perception*, *4*, 205–224.
- Oveis, C., Cohen, A. B., Gruber, J., Shiota, M. N., Haidt, J., & Keltner, D. (2009). Resting respiratory sinus arrhythmia is associated with tonic positive emotionality. *Emotion*, *9*(2), 265–270.
- Pelowski, M., Hur, Y., Cotter, K., Ishizu, T., Christensen, A., Leder, H., & McManus, C. (2019). Quantifying the if, the what, and the when of the sublime: A survey and network model of incidence, emotions, triggers, and distinct varieties within reports of personal sublime experiences. *Psychology of Aesthetics, Creativity, and the Arts*. Advance online publication. <https://doi.org/10.1037/aca0000273>
- 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.
- Porter, J. I. (2015). *The sublime in antiquity*. Cambridge University Press.
- Razavi, P., Zhang, J. W., Hekiart, D., Yoo, S. H., & Howell, R. T. (2016). Cross-cultural similarities and differences in the experience of awe. *Emotion*, *16*(8), 1097.

- Rudd, M., Vohs, K., & Aaker, J. (2012). Awe expands people's perception of time, alters decision making, and enhances well-being. *Psychological Science*, 23(10), 1130–1136.
- Schopenhauer, A. (2019). World as will and representation. In R. R. Clewis (Ed.), *The sublime reader* (pp. 194–198). Bloomsbury.
- Shapshay, S. (2019). A theory of sublime responses, the thin and the thick. In R. R. Clewis (Ed.), *The sublime reader* (pp. 329–339). Bloomsbury.
- Shaw, P. (2017). *The sublime*. Routledge.
- Shiota, M. N., Campos, B., Oveis, C., Hertenstein, M. J., Simon-Thomas, E., & Keltner, D. (2017). Beyond happiness: Building a science of discrete positive emotions. *American Psychologist*, 72(7), 617–643.
- Shiota, M. N., Neufeld, S. L., Yeung, W. H., Moser, S. E., & Perea, E. F. (2011). Feeling good: Autonomic nervous system responding in five positive emotions. *Emotion*, 11(6), 1368–1378.
- Shiota, M. N., Keltner, D., & John, O. P. (2006). Positive emotion dispositions differentially associated with Big Five personality and attachment style. *The Journal of Positive Psychology*, 1(2), 61–71.
- Stellar, J. E., John-Henderson, N., Anderson, C. L., Gordon, A. M., McNeil, G. D., & Keltner, D. (2015). Positive affect and markers of inflammation: discrete positive emotions predict lower levels of inflammatory cytokines. *Emotion*, 15(2), 129.
- Sundararajan, L. (2002). Religious awe: Potential contributions of negative theology to psychology, 'positive' or otherwise. *Journal of Theoretical and Philosophical Psychology*, 22(2), 174–197.
- Van Elk, M., Karinen, A., Specker, E., Stamkou, E., & Baas, M. (2016). 'Standing in awe': the effects of awe on body perception and the relation with absorption. *Collabra*, 2, 1–16.
- Wordsworth, W. The sublime and the beautiful. In R. R. Clewis (Ed.), *The sublime reader* (pp. 177–183). Bloomsbury.
- Yablo, S. (1993). Is conceivability a guide to possibility? *Philosophy and Phenomenological Research*, 53(1), 1–42.
- Yaden, D. B., Haidt, J., Hood Jr, R. W., Vago, D. R., & Newberg, A. B. (2017). The varieties of self-transcendent experience. *Review of General Psychology*, 21(2), 143–160.
- Yaden, D. B., Kaufman, S. B., Hyde, E., Chirico, A., Gaggioli, A., Zhang, J. W., & Keltner D. (2019). 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.
- Zickfeld, J. H., Schubert, T. W., Seibt, B., Blomster, J. K., Arriaga, P., Basabe, N., Fiske, A. P. (2019). Kama muta: Conceptualizing and measuring the experience often labelled being moved across 19 nations and 15 languages. *Emotion*, 19(3), 402–424.

## Author Biographies

**Robert R. Clewis** is a professor of Philosophy at Gwynedd Mercy University (Pennsylvania, USA) and in 2019/20 was a visiting scholar at the Max Planck Institute for Empirical Aesthetics in Frankfurt, Germany. He is the author of

*The Kantian Sublime and the Revelation of Freedom* (2009) as well as the editor of *Reading Kant's Lectures* (2015) and *The Sublime Reader* (2019).

**David B. Yaden**, PhD, is a post-doctoral research fellow at Johns Hopkins University School of Medicine working in The Center for Psychedelic and Consciousness Research. His research focus is on the psychology, neuroscience, and pharmacology of self-transcendent and transformative experiences, exploring how these experiences can result in long-term changes to well-being and identity. He is the editor of *Being Called* (Praeger) as well as *Rituals and Practices in World Religions* (Springer) and is co-authoring a book currently called *The Varieties of Spiritual Experiences: A Twenty-First Century Update* (Oxford University Press).

**Alice Chirico**, PhD, is a chartered psychologist, postdoc research fellow, and lecturer at the Catholic University of the Sacred Heart of Milan. Her research concerns complex experiences, including the psychological sublime, combined with art and new technologies for promoting wellbeing. She has been awarded several international prizes for new applications in the field of mental health, and she is currently involved in an Italian national grant to promote science learning motivation using the sublime. Author of the first Italian book on the psychological sublime, she is working on the sublime's clinical applications for affective disorders.