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Measuring hagioptasia: A case study in theory-testing through Internet-based personality scale development

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ABSTRACT

This article is presented as a case study illustrating the interplay between theory-testing, personality scale development, and construct validation. A new construct, *hagioptasia*, is proposed and scale development and initial construct validity research are described. Hagioptasia is conceptualized as a tendency to perceive certain persons and places are preternaturally "special" and as a desire to participate in that otherworldly specialness when, objectively, there is really nothing unearthly about the person or situation. Item and factor analyses support a general construct of hagioptasia with two subthemes: (1) attraction to glamourous, famous persons and a desire for similar achievement and recognition and (2) an aesthetic sense of wonder and transcendence. Items assessing these two subthemes correlated with a short measure of Enterprising and Artistic vocational interests, respectively. While the theory of hagioptasia and the validity of a hagioptasia scale received some support through associations with age, gender, educational level, and religious orientation, difficulties were noted with reverse-scored items and with assessing hagioptasia as an illusory or purely imaginary perception of specialness. Directions for future scale development and theory-testing are discussed.

> "It was a sensation, of course, of desire; but desire for what? Before I knew what I desired, the desire itself was gone, the whole glimpse withdrawn, the world turned commonplace again, or only stirred by a longing for the longing that had just ceased." (Lewis, 1955, p. 16)

This article describes research on a nearly ineffable perception of, and longing for, something special, a mysterious realm beyond the ordinary. C. S. Lewis and many other writers have used poetic language to describe their thoughts and feelings about this mysterious realm.

> "But what has any [common object of desire] to do with that unnameable something, desire for which pierces us like a rapier at the smell of a bonfire, the sound of wild ducks flying overhead, the title of *The Well at the World's End*, the opening lines of *Kubla Khan*, the morning cobwebs in late summer, or the noise of falling waves?" (Lewis, 1955, pp. 148–150).

C. S. Lewis emphasized that not even the most desirable things in this world (love, marriage, travel, learning, a satisfying career) come close to what he is talking about. "Most people, if they have really learned to look into their own hearts, would know that they do want, and want acutely, something that cannot be had in this world. There are all sorts of things in this world that offer to give it to you, but they never quite keep their promise. The longings which arise in us when we first fall in love, or first think of some foreign country, or first take up some subject that excites us, are longings which no marriage, no travel, no learning, can really satisfy. I am not now speaking of what would be ordinarily called unsuccessful marriages, or holidays, or learned careers. I am speaking of the best possible ones. There was something we have grasped at, in that first moment of longing, which just fades away in the reality. I think everyone knows what I mean. The wife may be a good wife, and the hotels and scenery may have been excellent, and chemistry may be a very interesting job: but something has evaded us" (Lewis, 1952, p. 107).

Lewis, the consummate Christian, is, of course, suggesting that the transcendent wonderfulness that people are really longing for is God. He believed that an exceptionally beautiful flower, melody, or person was a mere channel for an inconceivably greater, holy beauty. As channels for the holy, these objects of longing become *numinous*—a term coined by Rudolph Otto (1936), one of Lewis's favorite authors (Sarrocco, 2011). Carl Jung also borrowed Otto's term *numinous* to describe the perception of archetypes, "The archetypes have, when they appear, a distinctly numinous character which can only be described as 'spiritual,' if 'magical' is too strong a word . . . . There is a mystical aura about its numinosity, and it has a corresponding effect upon the emotions" (1947, pp. 205–206).

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While we do not endorse the spiritual metaphysics of Lewis, Otto, and Jung, we acknowledge their efforts to understand the intense longing for perceptions of numinosity with our own coined term, *hagioptasia* [literally, holy vision] for this experience. What we aim to do in this article is to transmute the poetic musings of Lewis and the German Romantics into a naturalistic, scientific theory of hagioptasia. Our primary goal is theoretical; This article therefore articulates the basic outlines of hagioptasia theory, heretofore presented only in informal writings and videos by the second author. But the article is also theoretical in a second sense. If hagioptasia is a viable theoretical construct, then one ought to be able to measure individual differences in hagioptasia. The development of personality scales to measure theoretical constructs such as hagioptasia is formally equivalent to theory-testing in any science (Hogan & Nicholson, 1988; Strauss & Smith, 2009). After introducing hagioptasia theory, this article then describes some very preliminary work on a hagioptasia scale.

1. The hagioptasia construct

1.1. The theory underlying hagioptasia

First, we formally define hagioptasia as follows. Hagioptasia includes the tendencies to (1) imagine an otherworldly quality of specialness in certain persons, places, and things, (2) feel awe and reverence toward this imagined specialness, (3) be attracted to and long for contact with persons, places, and things with this imagined specialness, and (4) desire to create or acquire things with special beauty or become special in ways similar to revered persons.

We theorize that hagioptasia represents an overreaction of evolved psychological mechanisms that hook our attention to phenomena relevant to our ancestors' survival and reproduction. From this perspective, it is not surprising that many hagioptasic experiences are triggered by spectacular events in nature (Mealey & Theis, 1995). Lewis's references to ducks flying overhead, cobwebs in summer, and crashing waves can be understood in this context. Similarly, Jung's numinous archetypes can be understood naturalistically as evolved psychological mechanisms (Mills, 2013; Walters, 1994),

Hagioptasia is, however, not limited to what is found in nature. Human art, intellectual activities, and other cultural inventions can be seen as *supernormal stimuli*—exaggerated representations of what attracts us in nature (Barrett, 2010). "Musical instruments and song refine and amplify tones that signal health and friendliness. Painting and sculpture capture the images we find most beautiful—naked human bodies, expressive faces, lush fruit, flowers, and landscapes" (Barrett, 2010, p. 169). Sex, the most important activity driving evolution, contains many examples of supernormal stimuli: "everything from pornography to advertising models, from plastic surgery to old-fashioned cosmetics, cinched waists, and padded bras can be seen as amplifying nature's signaling" (Barrett, 2010, pp. 29–30.)

We therefore propose that one category of hagioptasic experiences involves interactions with features of nature that produce awe (the starlit sky, majestic mountains, crashing waterfalls) and supernormal, artistic representations of nature. As children, we learn to attach a sense of specialness to cultural phenomena that adults present to us as especially significant, such as a Christmas eve candlelight service. To an extent, these cultural artifacts are arbitrary, but they build upon natural tendencies to perceive certain phenomena (e.g., an array of lights in a dark room; swelling organ music) as special. This imprinting of specialness explains why, as adults, we recall certain childhood experiences with poignant nostalgia for something magically special.

As we grow up, we are taught that elite individuals are responsible for some of the most revered phenomena in our culture. Some of these individuals are mythical or semi-mythical, the heroes of legends and religions. In addition to these heroes from the past, there are modern, exceptionally successful persons whose abilities and creations seem otherworldly. Some are celebrities whose job is to entertain us: glamorous actors, models, cooks, athletes, artists, writers, and musicians, all of whom can generate a huge fan base or following. But we can also become deeply attracted toward successful political and military leaders, brilliant scientists, and rich entrepreneurs, all of whom can be worshiped as heroes. Also, toward charismatic religious figures, self-help gurus, healers, and sellers of snake-oil who claim to have secret, special knowledge or abilities. People can even be attracted to modern fictional characters in novels, films, and TV shows. In addition, people can become attracted to symbols of these persons' success, such as palatial estates and exotic, luxurious cars.

All of these societal heroes constitute a second category of hagioptasic experiences. Fans of celebrities, actors, musicians, athletes, and so forth perceive their crushes and heroes as possessing idealized but illusory traits. These heroes may have talents that put them in the top 1% of their fields, but they are still of this mundane world. They still experience the ordinary trials and tribulations that common people experience. From a distance, they might seem to have a magical aura about them, but if their fans were to see them up close in their homes, having meals, talking with their children, taking naps, and watching TV, their auras would fade. They would be seen as just as ordinary as anyone. The illusion of the specialness of heroes is maintained because their fans do not actually spend significant face-to-face time with them (Barrett, 2010, pp. 40–44). Because they see their heroes from a distance, fans continue to view them idealistically, and they sometimes want to emulate their heroes and acquire the same kind of special powers, fame and recognition.

It is important to distinguish hagioptasic perception of specialness in persons with normal, adaptive interest in status. An adaptive orientation to status is concrete and realistic. Someone with an adaptive orientation to status accurately recognizes the specific qualities that lead to status in one's culture, whether those qualities include physical appearance and stature, athletic abilities, the ability to instill fear through intimidation and coercion, social intelligence, negotiation skills, creative problem-solving ability, or other qualities (Cheng, Tracy, & Henrich, 2010). An adaptive orientation toward status includes accurate assessment of those qualities in others and in one's self; this leads to (1) concomitant deference and respect to people who possess qualities leading to higher status and (2) realistic ambitions based on one's actual status-relevant qualities.

In contrast, the hagioptasic orientation toward status is muddled and confused. People with a hagioptasic attraction toward a glamourous celebrity, artist, or musician, or a charismatic religious figure or self-help guru do not fully understand the qualities that make the target seem magically special. The attraction is based on diffuse, unarticulated feelings. Similarly, hagioptasic desire for glory and specialness in not based on an objective self-assessment and knowledge of the qualities required in a culture for the attainment of status. They do not recognize that they are experiencing an exaggerated desire for conventional social status and the advantage that status confers for privileges, the acquisition of resources allocations, and social influence. Instead, they feel that they want to be "magically special" and they do not know how or what that specialness even is. Not having a clear aim for their inchoate desire for status, they are bound to fail and feel envious of those perceived to be more special than themselves.

According to our theory, hagioptasia is an exaggerated sense of specialness and therefore an illusion. Some persons, places, and things may be special, but not in a transcendent, otherworldly way. Despite its illusory nature, hagioptasia can still function as a real motivation underlying the search for love, acquisition of valuable art, and striving for status, glory, and admiration. Hagioptasia is an illusion that drives actual behavior because similar behaviors increased the reproductive success of our ancestors. The irony of hagioptasia is that we seek these experiences relentlessly, even though what we seek is illusory and therefore impossible to attain. Hagioptasia, which is an unwarrantedly exaggerated response, is not as adaptive as a normal appreciation of nature and successful persons. Although we occasionally experience joy

from hagioptasic experiences, failure and pain are guaranteed. That is the predicament of hagioptasia. The relentless craving for more than we could possibly have probably motivated our most reproductively successful ancestors but today can be a source of unnecessary suffering (Miller, 1995). Our hope is that obtaining a better understanding of hagioptasia and communicating that understanding to the general public might preserve some of the joy in hagioptasia while alleviating some of its suffering.

1.2. Comparisons and contrasts with other constructs

With the introduction of an allegedly new construct, it is important to outline similarities and differences with other established constructs. Below we compare hagioptasia with other possibly related constructs.

1.2.1. Awe

Awe has been described as a complex emotion experienced during the perception of vastness and is often accompanied by diminished sense of self (Yaden et al., 2019). Although generally viewed as a positive emotion, fear sometimes accompanies awe. Like hagioptasia, awe can be triggered by being in the presence of spectacular natural scenery, great skill, presumed supernatural events, powerful leadership, music, and art. We view awe as a frequent part of the hagioptasic experience of being overwhelmed by specialness. However, hagioptasia goes beyond awe in its desperate longing for connection to the object of hagioptasia, a longing that feels like it will never be fulfilled. Furthermore, events that trigger hagioptasia are not always extraordinary, spectacular events that inspire awe in virtually everyone. Sometimes events that trigger hagioptasia are unspectacular and uniquely personal. The Lewis (1955) quote at the beginning of this article refers to the overwhelming awe Lewis felt in the presence of his brother's toy garden consisting of moss, twigs and flowers in the lid of a biscuit tin. While we can all understand the feeling of awe in the presence of the vast night sky or spectacular mountains, it is unclear even to the person experiencing hagioptasia why such strong feelings would be aroused by a small object like a toy garden.

1.2.2. Idealization

Idealization has been conceptualized as "a motivated process in which Ron comes to believe that the specific qualities he hopes for in an ideal partner (e.g., someone who is warm rather than demanding and lazy rather than athletic) match the qualities Gayle actually possesses" (Murray et al., 2011, p. 620). Idealization is illusory to the extent that the target of idealization does not actually possess all of the qualities hoped for by the perceiver. Hagioptasic perception of idols and heroes is also illusory because they do not actually possess the otherworldly specialness attributed to them. The difference between idealization and hagioptasia is that in idealization, the perceiver can list specific ideal qualities. Idealization can be operationalized by the intraclass correlation between the perceiver's ratings of an ideal person and ratings of the perceived person. And the realism of those perceptions can be indexed by the intraclass correlation between ratings of the perceived person and the target's self-ratings (Murray et al., 2011). In contrast, persons experiencing hagioptasia do not understand the strong attraction they have for their idols and heroes and would be unable to produce a template of ideal qualities. Hagioptasic attraction is amorphous and mysterious, more like romantic infatuation, sometimes called limerence.

1.2.3. Limerence

Limerence is a term coined by researcher Dorothy Tennov (1979) to distinguish the feeling of being "in love" or infatuated with someone from the process of loving (truly caring for) someone. Limerence is characterized by intense attraction to and obsessive, intrusive thoughts about the beloved. Emotions accompanying limerence swing between joy when the person is with the beloved and despair when they are separated, or the love is unrequited. The neurochemistry and specific brain areas involved in limerence have been well documented (Aron et al., 2005; Leonti & Casu, 2018) and in both symptoms and brain chemistry resembles to some degree obsessive-compulsive disorder. While the deep attraction and obsessiveness in limerence is also seen in hagioptasia triggered by persons, a major difference is that the former is directed toward a romantic partner and the latter, toward an admired hero or idol. Both syndromes are also characterized by a mixture of desperate longing, joy in the presence of the loved or admired person, and deep sadness in the absence of the person. Tennov (1979) writes that limerence can be very short-lived in the normal crushes of immature teenagers. However, she notes that it can become problematic when, over time, the limerence reaches a stage that Stendhal called *crystallization*—a distorted perception of the beloved as perfect.

1.2.4. Stendhal syndrome

Stendhal Syndrome (also known as Florence syndrome or hyperkulturemia) was named after the same Stendhal cited by Tennov (1979). In addition to writing a classic treatise on love, the French writer Stendhal [real name, Marie-Henri Beyle] is also famous for his extreme reaction as he walked by the tombs of Machiavelli, Michelangelo, and Galileo at Basilica of Santa Croce in Florence: "celestial feelings," tachycardia, and fainting (Aria, 2019, p. 58). In 1989, the psychiatrist Graziella Magherini coined the term "Stendhal syndrome" in a published study of 106 tourists who experienced symptoms similar to Stendhal upon viewing the art of Florence (Aria, 2019). The symptoms ranged from psychotic (delusions, hallucination, depersonalization) to emotional (depression, anxiety, euphoria) to psychosomatic (dizziness, sweating, tachycardia, fainting). Some cases of hagioptasic perception of art (particularly religious art) may be similar to Stendhal syndrome, although the symptoms of the clinical Stendhal syndrome appear to be far more intense than hagioptasia.

1.2.5. Gastaut-Geschwind syndrome

Another clinical syndrome that bears some resemblance to hagioptasia is Gastaut-Geschwind Syndrome, seen in patients with temporal lobe epilepsy (Trimble & Freeman, 2006). Gastaut-Geschwind syndrome is marked by hyper-religiosity and mystical states, hypergraphia (obsessive writing), euphoric episodes, tendencies toward repetition in thought and conversation, abnormal metaphysical interests, and obsessiveness. These stable personality characteristics, assessed by the Bear-Fedio Personality Inventory (Bear & Fedio, 1977) are observed in patients interictally (between seizures). Gestaut-Geschwind patients have also been observed to experience ictal (just prior to a seizure) "numinous auras," marked by depersonalization, derealization, dreamy states, ecstasy, and out-of-body experiences (Dolgoff-Kaspar et al., 2011; Saver & Rabin, 1997). These numinous auras resemble hagioptasia, but we think it is unlikely that hagioptasic experiences necessarily involve full-blown temporal lobe epilepsy. Perhaps hagioptasia, at least in some cases, is related to subclinical micro-seizures, or what Persinger (1983) called *temporal lobe transients*.

1.2.6. Magical thinking

Magical thinking is a very broad term that is used in different ways in anthropology, psychiatry, and psychology. Freud and Piaget viewed magical thinking as a confusion between subjective, inner experience and objective, external reality. They said that young children lack a firm boundary between their sense of self and the external world. Such a boundary takes years to develop, disposing children toward various forms of magical thinking: that imagined creatures such as elves and fairies are just as real as actual living beings, that nonhuman animals, plants, and things can possess human mental characteristics such as intent and emotions, and that external reality can be influenced directly by thoughts and feelings (Woolley, 1997). Such magical thinking has been clearly documented in children, although research indicates that it

is just a prevalent in adults, simply appearing in different forms (Woolley, 1997). Hagioptasia could be said to represent a form of magical thinking in that it involves a sensed connection to something preternatural. Hagioptasia is different from typical magical thinking, however, because the "something preternatural" remains vague and undefined. It is not a world of elves, fairies, and objects of animistic thinking, and does not involve the feeling that reality can be directly controlled by the mind. If hagioptasia is a form of magical thinking, it is not one of the typically described forms of magical thinking.

1.2.7. Self-transcendence and mystical unity

Various kinds of self-transcendent experience (STE) have been described by psychologists, alternatively labeled mindfulness, flow, peak experiences, and mystical experiences (Yaden, Haidt, Hood, Vago, & Newberg, 2017). The common denominator in STEs is a diminished sense of self (often accompanied by awe) and a sense of enhanced connectedness to other people and one's surroundings (Yaden et al., 2017). Hagioptasia can include momentary self-transcendence in which the feeling of connectedness is very brief and is followed by the painful, inconsolable longing for reconnection. Whereas the emotions associated with connections to the transcendent in STEs are almost entirely positive, the emphasis in hagioptasia is on the *lack* of connection to the nebulous, mysterious specialness and the angst accompanying that lack of connection.

1.2.8. Need for meaning

Related to self-transcendence and connectedness to something special is the human *need for meaning* in life (Baumeister, 1991). Many people define a meaningful life by a connection to something larger than oneself, and often that something is God who has a purpose for us (Abeta & Routledge, 2018; Baumeister, 1991). Believing that one has a valuable, noble purpose, whether given by God or a social movement, provides direction to life and gives people a sense that life is worthwhile. Without meaning, the significance of one's life can seem no greater than if one were a single fly among billions of flies (Johnson, 2012). The human need for meaning may encourage hagioptasic experiences, because in the moment of hagioptasia there is a sense of deep meaningfulness, a feeling that one is encountering something infinitely better than the mundane, ordinary world. Unlike religious conversion or commitment to a social cause, which can last a lifetime, hagioptasic experiences fade quickly, and the person is left not knowing exactly the nature of what seemed, for a moment, poignantly meaningful.

1.2.9. Sehnsucht

Of all the constructs we found in our review of the literature, *Sehnsucht* may come the closest to our concept of hagioptasia. *Sehnsucht* is a concept from the German Romantic tradition. It has no exact English translation but roughly means an addictive longing or yearning that cannot be satisfied by any ordinary object or experience. Evans (2014) describes it as "an addiction to the very act of longing" (p. 3). In some of his writings, Lewis (1933) described his own inconsolable longing as a form of *Sehnsucht*. Susanne Scheibe and her German colleagues established perhaps the only academic research program for assessing and studying *Sehnsucht* (Kotter-Grühn, Scheibe, Blanchard-Fields, & Baltes, 2009, 2009; Scheibe, Blanchard-Fields, Wiest, & Freund, 2011, 2007). However, in our view this research program deviated at the outset from the understanding of *Sehnsucht* as "inconsolable longing" for something that transcends the ordinary, everyday world. Instead of recognizing that people experiencing *Sehnsucht* cannot really articulate the object of their longing, Kotter-Grühn et al. (2009) assume that people can readily identify what they are longing for and that these longings can be sorted into quite ordinary categories such as partnership, family, work, education, health, and friendship.

1.2.10. Nostalgia

Nostalgia is a bittersweet feeling that occurs when thinking about a dearly loved past event or time period in one's life. The sweetness of nostalgia derives from reexperiencing the pleasant emotions from the past; the bitterness, from the knowledge that one can never return to and relive the past. Hagioptasia can be triggered by memories of past events as well as perceptions of present events, and in those cases could be said to involve nostalgia. In his essay on the *Sehnsucht* of Thomas Wolfe and C. S. Lewis, Evans (2014) notes that Wolfe was particularly focused on the nostalgia and homesickness of Americans for a past whose existence is indefinite and unclear. Wolfe says that Americans have no idea what it is in the past that they are pining for, and this desire for something uncomprehended sounds like hagioptasia.

In *Surprised by Joy*, Lewis (1955) recounts his most well-known example of inconsolable longing, the recollection of his brother Warnie bringing into the nursery a toy garden consisting of moss, twigs and flowers in the lid of a biscuit tin. Why this recurrent memory brought so much nostalgia was a mystery to Lewis, "It was a sensation of course, of desire, but desire for what? Not, certainly, for a biscuit tin filled with moss, nor even (though that came into it) for my own past" (Lewis, 1955, p. 16). Again, this hagioptasic experience cannot be reduced to a nostalgic desire to reexperience a specific event like a toy garden or even to relive one's youth; instead, it is a longing for something that is beyond one's comprehension. Initially, Lewis compared this longing to *Sehnsucht*, but eventually came to use his own term for such longing, *Joy*.

1.2.11. Narcissism

When hagioptasia involves a desire to emulate an idealized hero and become preternaturally special oneself, such an expression of hagioptasia can resemble narcissism. Pincus et al. (2009) distinguish normal narcissism from clinical or pathological narcissism. Normal narcissism is the widespread human tendency to want to think well of oneself, to have one's worth validated by others, and to enhance one's own status (cf. Anderson, Hildreth, & Howland, 2015). Clinical narcissism, on the other hand, is marked by excessive self-adulation, excessive sensitivity to disappointments and threats to self-esteem, and maladaptive strategies for coping with disappointments and threats to a positive self-image (Pincus et al., 2009).

Citing the failure of existing self-report measures of narcissism to distinguish normal from clinical narcissism and to adequately assess the multidimensional nature of narcissism, Pincus et al. (2009) constructed the Pathological Narcissism Inventory (PNI) and confirmed their hierarchical conception of narcissism (Wright, Lukowitsky, Pincus, & Conroy, 2010). Items on the PNI define the following seven factors: Entitlement Rage, Exploitativeness, Grandiose Fantasy, Self-Sacrificing Self-Enhancement, Contingent Self-Esteem, Hiding the Self, and Devaluing. Of these seven facets of clinical narcissism, only the Grandiose Fantasy items (e.g., "I often fantasize about performing heroic deeds.") bear a resemblance to our conception of a hagioptasic desire to be special. The other elements of narcissism simply do not apply. Persons who experience hagioptasia do not feel entitled, do not exploit others, and so forth, so they would not meet the DSM criteria to be labeled narcissists. Grandiose fantasies occur in other clinical syndromes as well (e.g., schizophrenia), but we do not regard hagioptasia as a clinical problem. C. S. Lewis aspired to be a great writer, but he was neither a narcissist nor a schizophrenic.

1.3. Predictions concerning the measurement of hagioptasia

A basic assumption in measurement psychology, dating back to educational psychologist William McCall (1922), is that anything that exists must exist in some amount and can therefore be measured. If hagioptasia exists, a first prediction is that it can be measured reliably. We therefore predicted that a set of potential hagioptasia items, refined with item analysis, would show an acceptable Cronbach alpha estimate

of reliability of at least .70.

Because the theoretical construct of hagioptasia is multidimensional, covering perceived specialness in the physical environment, other people, and one's self, a second prediction was that a factor analysis of responses to the hagioptasia items would show that items cluster along those different themes. We expected that items indicating an aesthetic attraction to features of nature would form one cluster, while items describing a fascination with celebrities and heroes and a desire to be exceptionally special one's self to form two additional clusters.

Finally, we predicted that hagioptasia would correlate with various demographic and psychological variables. We expected that hagioptasia, because it is an illusory sense of specialness, would decrease with the increase in knowledge and realism that generally comes with increasing age and higher levels of education. Furthermore, because the young and those with lower socioeconomic status are more preoccupied with how they are going to get ahead in the world, we expected that they would be more likely to endorse items whose content deals with celebrities and personal specialness.

Because hagioptasia seems similar to the spiritual experiences described by C. S. Lewis, we predicted that persons expressing religious or spiritual attitudes would score higher on overall hagioptasia than persons identifying as atheist, agnostic, or humanist. We also made a more differentiated prediction about the subcomponents of hagioptasia. Because the nominally religious are probably more concerned with using their religion as a badge of social status and acceptability, we predicted that this group would be more likely to endorse items describing personal specialness than the spiritual-but-not-religious. In contrast, we expected that the spiritual-but-not-religious would be more likely to endorse the more impersonal items dealing with beauty in nature than the nominally religious because transcendent, one-with-nature experiences are part of what people mean when they call themselves spiritual-but-not-religious.

We reasoned that males would be more likely to endorse items related to personal specialness than females because, from an evolutionary perspective, achievement and status are the means by which males try to attract mates. Finally, we predicted that persons with enterprising vocational interests would be more likely to endorse items describing personal specialness and that persons with artistic vocational interests would be more likely to endorse items that concerned the perception of beauty in nature. Before correlating vocational interests with hagioptasia, we did a quick validity check based on well-established sex differences for the Holland types. Males tend to score higher on Realistic and Investigative scales, while females tend to score higher on Artistic and Social scales (Holland, 1985), so we predicted exactly these sex differences for our Holland measure.

2. Method

2.1. Item authoring

Although our primary intent here is to introduce hagioptasia as a theoretical construct similar to what Lewis (1955) called *Joy* and the German Romantics, *Sehnsucht*, we also offer a first attempt at assessing individual differences in hagioptasia with questionnaire items. Discussion between the two authors of this article led to the identification of three content areas around which hagioptasia items might be written. The first area refers to the sense of longing for extraordinary, sublime meaning that lies just out of reach. Because the nature of this extraordinary specialness cannot be grasped, we called this Indeterminate Hagioptasia. The second area refers to the perception of certain people as extraordinarily special and glamorous. We called this Hagioptasic Specialness Sensed in Other People. The third was the desire to be extraordinarily special oneself. We called this Hagioptasia as a Motivational Drive. Following guidelines on writing clear personality self-report items (Wolfe, 1993), the second author wrote items to represent these three content areas, and after many iterations of discussion and revision, we settled on an initial set of 20 items.

2.2. Web-Based administration of the hagioptasia items

A Google Forms document containing the hagioptasia items was created by the second author. This document is included as a supplementary file. The document was titled "Feelings of Longing" and began with the following instructions. "The author C. S. Lewis wrote about 'the inconsolable longing in the human heart for 'we know not what.' This questionnaire asks about such feelings of longing. You should be 18 years or older to take this survey. The survey should take less than 10 minutes to complete. Responses are completely anonymous." The researchers' names and contact information were provided, and participants were thanked for contributing to the research. Endorsement of A Declaration of Consent was required to continue. Participants who desired feedback left an email address, but providing that information was optional. Those who did were contacted after data collection was completed and were provided with an indication of their levels of hagioptasia compared to other participants.

In addition to agreement on a 1–5 scale to the 20 hagioptasia items, the survey form asked for information about gender, age, education completed, religious/spiritual orientation, and perceived resemblance to the six Holland (1985) vocational interest/personality types (on the same 1–5 scale of agreement). Gender choices were (1) Male, (2) Female, or (3) Nonbinary. Education completed was coded 1 = less than 12 years, 2 = high school diploma or equivalent, 3 = 2- or 4-year degree beyond high school, and 4 = advanced graduate or professional degree. Religious/spiritual categories included (1) atheist, agnostic or humanist, (2) nominally religious (not active in religion), (3) spiritual but not traditionally religious, (4) traditionally religious (active in one of the major world religions) and (5) other, where participants could type in their religious/spiritual orientation.

Resemblance to each of the six Holland types was estimated by a single item. Although multi-item scales are generally preferred to single-item scales, carefully worded one-item self-rating scales have been shown to demonstrate very good reliability and validity (Burisch, 1984; Spörrle & Bekk, 2014). The six Holland type constructs have been shown to be very robust and easy to grasp. Given short descriptions of the types, novices can generally recognize the types easily and assess their similarity to the types (Holland, 1985). Furthermore, each of the six items was multiphasic, addressing, in turn, liked activities, personal skills and abilities, and important values. For example, the Artistic item read "I like to use my imagination to express myself through art, drama, dance, film, music, or writing. My creative skills are important to me. I value beauty and originality." Respondents indicated their perceived similarity to each type on a 1–5 scale.

2.3. Research participants

Research participants were recruited by temporarily modifying a popular site for completing a measure for the Five-Factor Model (FFM) of personality, http://www.personal.psu.edu/IPIP/. The revised front page for the site acknowledged that the visitor was there to complete the FFM inventory and provided a direct link to the inventory if the visitor was not interested in participating in the hagioptasia study. Persons who were interested in the hagioptasia study were given a link to the Google Form document Feelings of Longing.

After four months, responses were recorded from 2943 participants (983 male, 1919 female, 41 non-binary), after which the link to the hagioptasia survey was removed. Ages ranged from 18 to 84, with a mean of 28.70 and standard deviation of 11.75. Rounded percentages of reported highest educational level were as follows: less than 12 years, 2.7%; high school diploma or equivalent, 18.7%; 2- or 4-year degree beyond high school, 49%; and advanced graduate or professional degree, 29.7%. Rounded percentages of religious or spiritual orientation

were as follows: atheist, agnostic or humanist, 31.5%; nominally religious (not active in religion), 23.8%; spiritual but not traditionally religious, 24.9%; traditionally religious (active in one of the major world religions), 17.4%. The remaining 2.4% entered their own descriptions, some of which might fall into the previous categories (e.g., indifferent agnostic, Islam, Jehovah's Witness), but these responses were not analyzed.

2.4. Item and reliability analyses

According to Hogan and Nicholson (1988, p. 622), "test validation is a dialectical movement wherein the researcher works back and forth between two questions: (a) Does disposition D exist; and (b) does test A reliably assess individual differences in disposition D? Personality test reliability is often estimated by calculating Cronbach's alpha. If hagioptasia exists as a coherent, unitary personality disposition, then items purporting to tap this disposition ought to intercorrelate positively, producing a Cronbach alpha of at least .70.

2.5. Principal components factor analysis

Further clarity on the homogeneity of the hagioptasia was sought by conducting an item-level principal components factor analysis. The analysis was conducted on item responses "as is," without recoding reverse-scored items. Reverse-scored items were expected to load negatively on components defined by positive loadings from forward-scored items with the same content. Highest-loading items on components were used to compute scores representing narrower facets of hagioptasia.

2.6. Relations between other variables and hagioptasia

Predictions on relations between hagioptasia and other variables were tested through appropriate statistical analyses. The religious orientation and gender variables were categorical; therefore, mean differences in hagioptasia across religious orientations and mean sex differences in hagioptasia were examined with one-way analyses of variance. Educational level was treated as a continuous variable, as were age and similarity to each Holland vocational type; therefore, Pearson correlations were computed between these variables and hagioptasia.

3. Results

3.1. Item and reliability analyses

Cronbach's coefficient alpha was calculated to be .70 for the full set of 20 items, supporting the idea that hagioptasia might exist as a personality disposition and can be reliably assessed with the present set of items. However, the item-total correlations for four of the six reverse-scored items ranged from only .10 to .14 (in contrast to an average item-total correlation of .38 for forward-scored items) and two of the reverse-scored items actually showed negative item-total correlations (see the last column in Table 1). The reverse-scored item 8 "People I consider glamorous appear even more glamorous as I become familiar with their everyday lives" was particularly problematic, with an item-total correlation of −.31. Removing just this item increased coefficient alpha from .70 to .74.

3.2. Principal component analyses and further reliability analyses

A principal component analysis showed five components with eigenvalues greater than 1.00, but the scree plot suggested three components accounting for 38.5% of the variance as the best solution. Examination of the 2-, 3-, and 5-component solutions confirmed that the three-component solution was the most interpretable, even though the third component was weak.

Table 1 displays the item loadings for the three-component solution. All items that had been classified a priori as "hagioptasic specialness sensed in other people" and "hagioptasia as a motivational drive" did not load primarily on two different components as predicted. Instead, all of these items showed their highest loadings on Component 1 except three reverse-scored items (12, 14, and 17), which showed their highest loadings on Component 3. The content of items loading primarily on Component 1 describe a motivating energy toward special achievement and recognition, and competitive comparisons to others who have achieved glamor and fame.

Because Component 3 shows high loadings only from the three reverse-scored items, this component may represent response style rather than a substantive component. Item 17 denies a desire to be special like one's heroes, and items 12 and 14 deny competitive comparisons with members of one's own sex. We had trouble with the wording of item 14, so it is possible that respondents had difficult interpreting this item. In a two-factor solution, these three items did not load highly on either factor. Whether the problems with these items stem from response style or interpretation difficulty, it seemed appropriate to exclude them at this point, along with reverse-scored item 8 (which loaded in the wrong direction on Component 1), from further analyses.

All items that had been classified a priori as "indeterminate hagioptasia" showed their highest loadings on Component 2, except items 13 and 16, whose primary loading is on Component 1 with a substantial secondary loading on Component 2. The content of items loading highly on Component 2 refers an aesthetic sense of wonder about a special, transcendental reality.

The results of the principal components factor analysis therefore point to two interpretable components of hagioptasia that are distinct but related by the common theme of specialness. We labeled Component 1 Achievement/Recognition and Component 2 Aesthetic Wonder. An achievement/recognition hagioptasia subscale defined by items with the 9 highest loadings on Component 1 showed a coefficient alpha of .81 for the full sample. An aesthetic wonder scale defined by items with the 7 highest loadings on Component 2 showed a coefficient alpha of .62. An overall Hagioptasia scale using all 16 items showed a coefficient alpha of .77.

3.3. Relations between other variables and hagioptasia and its components

As predicted, analysis of variance showed statistically significant differences between religious orientations on overall hagioptasia, $F_{(3, 2871)} = 27.79$, $p < .001$, Achievement/Recognition, $F_{(3, 2871)} = 13.29$, $p < .001$, and Aesthetic Wonder, $F_{(3, 2871)} = 62.63$, $p < .001$. Predictions concerning individuals identifying as atheist, agnostic, or humanist were partially confirmed. Posttests with Bonferroni correction ($p < .05$) showed that this group scored significantly lower than all other groups on overall hagioptasia and Aesthetic Wonder, but significantly lower only compared to nominally religious on Achievement/Recognition.

Predictions comparing spiritual-but-not-religious individuals with the nominally religious were also confirmed. The former group scored significantly higher on Aesthetic Wonder while the latter group scored significantly higher on Achievement/Recognition. In fact, nominally religious individuals scored significantly higher on than all other groups on Achievement/Recognition.

Contrary to our hypothesis, women scored higher than men on Achievement/Recognition, $M = 27.3$, $SD = 7.5$ vs. $M = 24.9$, $SD = 7.3$; $t_{(2900)} = -2.43$, $p < .001$. (Women's scores on Aesthetic Wonder were also statistically significantly higher than men's due to the large sample size, but the absolute difference, 25.9 vs. 25.3, was not great.).

As predicted, age correlated negatively and significantly with overall hagioptasia, $r = -.26$, $p < .001$), and this seemed to be mostly due to the negative correlation with Achievement/Recognition,

Table 1
Rotated component matrix of hagioptasia items.

No.	Item	Component[a] 1	2	3	Item Type[b]	Item-Total Correlation[c]
1	Everyday places or things from my childhood can still hold a 'magical' quality for me.	.16	**.47**	−.07	I	.26
2	The thought of meeting a celebrity or influential person makes me nervously excited, mainly because they are famous.	**.49**	−.02	−.18	O	.30
3	I often feel a strong desire for success without being able to figure out what I want to be successful at.	**.52**	.13	.05	M	.39
4	I almost never perceive a deep sense of mysterious wonder or glory.	.18	**−.63**	.17	I	.10
5	Sometimes a part of me insists that someone else is more 'special' than I am, even when I know they are not.	**.66**	−.04	.04	O	.42
6	When people I know are admired by others, it can make me feel aggressively competitive.	**.64**	−.02	−.09	M	.42
7	While viewing landscapes, I've experienced a magnificence that transcends everyday life.	−.03	**.63**	.03	I	.17
8	People I consider glamorous appear even more glamorous as I become familiar with their everyday lives.	.42	.06	−.02	O	−.31
9	I can become angry when people dismiss the things that help to make me feel 'special'.	**.59**	.10	−.11	M	.44
10	Sometimes I am excited by momentary notions of beauty or glory that seem to be just beyond my reach.	.43	**.49**	−.01	I	.47
11	I can't help feeling that people of a higher social class are more 'special' than I am, even when I know that this is untrue.	**.69**	−.12	.05	O	.40
12	I do not care about respect and admiration from people of my own sex.	−.13	.00	.68	M	.14
13	I imagine a sense of profound fulfillment that I have yet to achieve in my actual life.	.39	**.32**	.12	I	.36
14	I am less excited by encountering celebrities or influential people who are the same sex as me, than those who are not.	.13	.05	.65	O	−.07
15	My attempts to experience a more glamorous lifestyle never fully succeed because I always feel a little too ordinary.	**.65**	−.08	.21	M	.36
16	I sometimes feel a strong yearning for some kind of beauty or fulfillment, but exactly what, I do not know.	**.58**	.27	.17	I	.49
17	I never desire to be 'special' in the ways that my heroes appear 'special' to me.	−.07	−.19	.46	M	.13
18	I can remember childhood notions of glory, wonder or spirituality that seem strangely sophisticated for a young child.	.13	**.61**	.19	I	.26
19	Seeing other people as being somehow more 'special' than myself can make me feel envious or jealous.	**.72**	.00	−.13	M	.52
20	I never have any deep thoughts or feelings that some people might call 'spiritual'	.12	**−.59**	.21	I	.13

[a] Loadings in boldface indicate items used in subscales to assess two components of hagioptasia.
[b] I = Indeterminate Hagioptasia; O = Hagioptasic Specialness Sensed in Other People; *M* = Hagioptasia as a Motivational Drive. Reverse-keyed items in red font.
[c] Reverse-keyed items have been reverse-scored and therefore should show positive corrected item-total correlations.

$r = -0.31$, $p < .001$. Age correlated a nonsignificant $r = -0.03$ with Aesthetic Wonder. When educational level was coded 1–4 for the four levels of education, this variable was negatively related to overall hagioptasia ($r = -0.07$, $p < .001$), but this effect was entirely due to the Achievement/Recognition component ($r = -0.09$, $p < .001$). Aesthetic Wonder was uncorrelated with educational level ($r = 0.00$). Thus, the prediction about the relative importance of Achievement/Recognition for those of lower socioeconomic status was confirmed, although the amount of variance accounted for was small.

The validity check on the Holland vocational interest scales produced the expected sex differences. Males had been predicted to score higher on the Realistic and Investigative scales, while females had been predicted to score higher on the Artistic and Social scales. After ANOVAs of vocational interests for male, female, and nonbinary participants, planned contrasts between males and females with Bonferroni correction showed statistically significant differences on these four Holland scales at the $p < .05$ level.

As predicted, overall hagioptasia is higher in people with Artistic and Enterprising orientations (*rs* = .17 and .15, respectively, *ps* < .001), but those correlations were primarily due to the Aesthetic Wonder and Achievement/Recognition components, respectively. Artistic scores correlated $r = .31$, $p < .001$ with Aesthetic Wonder but only $r = .02$, *ns* with Achievement/Recognition. Enterprising scores correlated $r = .08$, $p < .001$ with Aesthetic Wonder but nearly double that, $r = .15$, $p < .001$, with Achievement/Recognition. No predictions were made concerning the other Holland scales, but we also found that the Social scale correlated $r = .20$, $p < .001$ with Aesthetic Wonder, and the Investigative scale correlated $r = -.12$, $p < .001$, with Achievement/Recognition.

4. Discussion

4.1. Brief review of hagioptasia theory

The intent of this article differs from typical accounts of personality scale construction and validation that claim to deliver a finished product, a scale that has been sufficiently validated to use "as is" in future research. Rather, our primary purpose is to introduce hagioptasia theory. We present our empirical findings as a mere first step toward understanding hagioptasia and as an illustration of the idea that scale validation is identical to theory-testing, which should be a never-ending process (Hogan & Nicholson, 1988; Strauss & Smith, 2009). In that light, this discussion first briefly reviews our theory of the hagioptasia construct. The next section discusses how our scale development research illustrates the dialectical relation between scale construction and theory-testing, where sometimes better items must be authored and sometimes theory must be revised.

We defined hagioptasia as the perception of natural phenomena, persons, and experiences as so "special" that they feel magical or otherworldly. This perception is accompanied by an inconsolable longing to connect with that specialness. When directed toward people who are perceived to be mysteriously special, hagioptasic perception can also be accompanied by a desire to become preternaturally special oneself. Although hagioptasia has a real power to motivate us to attempt to associate with people we regard as special and/or to become more special ourselves, this feeling is based on a fantasy or illusion, because magic is not real. Consequently, the specialness that people long for in hagioptasia will always remain just out of reach. The inability to make the hagioptasic experience last inevitably results in painful states of deprivation, frustration, incompleteness, jealousy, or envy. Unlike awe, which is primarily a positive emotion (Shiota, Keltner, & John, 2006), hagioptasia is closer to the German concept of *Sehnsucht*, a mixture of pleasure and pain. Again, in the words of C. S. Lewis (1955), "Joy is distinct not only from pleasure in general but even from aesthetic pleasure. It must have the stab, the pang, the inconsolable longing" (p. 72).

4.2. Examining the coherence of hagioptasia with item analysis

Although the coefficient alpha of .70 indicated that the full 20-item set was reasonably coherent, item analyses indicated that not all items performed equally well. In particular, reverse-scored items tended not to correlate in the expected direction with total scores as strongly as the forward-scored items. Our reverse-scored item intending to capture the double-nature of hagioptasia as initial joy followed by disappointment showed a substantial negative correlation with total scores. Although 16 items were deemed suitable for retention, authoring better reverse-scored hagioptasia items remains a challenge for future research.

Particularly disappointing was the failure of one reverse scored item, "People I consider glamorous appear even more glamorous as I become familiar with their everyday lives," to correlate as expected with overall hagioptasia scores. Because construct validation is equivalent to theory-testing (Hogan & Nicholson, 1988; Strauss & Smith, 2009), any failure of items to behave as predicted raises the question of whether the measurement instrument or the theory was wrong. Our theory of hagioptasia assumes that the perceived hyper-specialness of things and persons in a hagioptasic experience is illusory and that the illusion fades with greater familiarity with an object of longing. This assumption is supported by Lewis's (1952) descriptions of apparent hagioptasic experiences, e.g., "There was something we have grasped at, in that first moment of longing, which just fades away in the reality" (p. 107). (See also Fisher, 1976–77, on attitude shifts toward perceptions of the sublime.) We therefore reasoned that as people gained greater familiarity with a celebrity, the magic would fade, such that they would therefore *disagree* with the item "People I consider glamorous appear even more glamorous as I become familiar with their everyday lives." Rather than abandon this aspect of our theory, we took the other option, deducing that this item for some reason does not tap into the loss of hagioptasic specialness with increasing familiarity.

Perhaps our respondents did not actually become more familiar with the glamorous people they had in mind and simply guessed how they might feel under those conditions. Or perhaps they were able to maintain the illusion that their heroes are special, even when faced with evidence that they are ordinary. The methodology used in the current study seems insufficient to determine the answer to this question. In the future, interviews or questions asking respondents to describe specific examples of becoming more familiar with the heroes they worship could help us understand this issue more clearly, allowing us to author more appropriate items for a revised hagioptasia scale.

4.3. Examining the coherence of hagioptasia with principal components analysis

Part of our original theory of hagioptasia postulated three content areas: Indeterminate Hagioptasia (a sense of longing for extraordinary, sublime meaning that lies just out of reach), Hagioptasic Specialness Sensed in Other People (the perception of certain people as extraordinarily special and glamorous), and Hagioptasia as a Motivational Drive (the desire to be extraordinarily special oneself). Consequently, we authored items around these three themes.

Although a scree test indicated three components, the third component had strong loadings from only three items, all of them reverse-scored, and the content of this component was not interpretable. We take this finding as another indication of problems with reverse-scored items for assessing hagioptasia and a need for authoring better reverse-scored items in future revisions to the scale.

The principal components factor analysis showed that items written to assess Hagioptasic Specialness Sensed in Other People and Hagioptasia as a Motivational Drive loaded on the same factor. We interpret this finding as a need for slight revision in our theory. Apparently, when people feel motivated to become extraordinarily special, this is accompanied by (perhaps even fueled by) comparisons to others who are perceived to be special. For now, we tentatively accept that there are only two distinct components hagioptasia: Achievement/Recognition and Aesthetic Wonder.

Now that principal components analysis has revealed two distinct, interpretable themes of Achievement/Recognition and Aesthetic Wonder, future item authoring can target these components more precisely. In the current item set, two items (13 and 16) probably loaded on both Components 1 and 2 because they mention fulfillment (and therefore the achievement content of Component 1) as well as the sense of undefinable mystery of something just out of grasp (and therefore sense of wonder content of Component 2). If scale revisions are to maximize the distinctiveness of the two components, the content of new items should avoid referring to both achievement and wonder.

There are, however, disagreements among researchers about whether scales should contain discernable components. Some researchers (e.g., Briggs & Cheek, 1986; Strauss & Smith, 2009) raise cautions about scales whose items load on different factors in a factor analysis. They argue that scales purporting to measure one construct should not show more than one factor when factor analyzed. On the other hand, many others (e.g., Costa & McCrae, 2010) argue that personality traits are naturally hierarchical and that there is nothing wrong with combining scores from scales that assess narrow, specific traits into an overall score that represents a broader, global trait. Nonetheless, even Costa & McCrae (2010) note that sometimes specific criteria will be more strongly related to one of the narrower facets than the other facets. We had predicted that this would be the case for our Hagioptasia scale.

4.4. Associations between hagioptasia and other variables

A number of predictions about the relations between hagioptasia and other variables were confirmed empirically. Hagioptasia was lower in older participants and participants with higher levels of education. We expected this because hagioptasia theory suggests a better understanding of the illusory nature of hagioptasia in older and better-educated individuals. Also as expected, hagioptasia was also lower in atheists, agnostics, and humanists than in individuals identifying as religious or spiritual, because the former group is dismissive of otherworldly phenomena.

Except in two cases, the additional predicted relations with the components of hagioptasia were confirmed. Although overall hagioptasia showed an inverse relationship to age and educational level, we had predicted that this would be primarily due to the Achievement/Recognition component of hagioptasia, and this turned out to be the case. This prediction was made on the presumption that status is a greater worry for younger persons with lower social status than older, economically established individuals. Also confirmed was the prediction that nominally religious individuals would score higher than nonreligious individuals on Achievement/Recognition, confirming our hunch that these individuals use their religious label for social respectability and acceptance. The spiritual-but-not-religious individuals, in contrast, scored higher than the nominally religious on Aesthetic Wonder. This was predicted because transcendental experiences are part of the identity of the former group but not the latter.

Finally, although the nonbelievers scored lower, as predicted, than all other groups on overall hagioptasia, separate analyses for the components of hagioptasia showed the same result only for Aesthetic Wonder. The nonbelievers' level of Achievement/Recognition was significantly lower only when compared to the nominally religious. We had thought that all components of hagioptasia would be significantly lower for compared to all groups; that it was significantly lower than only one of the religious groups constitutes a failed prediction. This failed prediction suggests a slight revision in hagioptasia theory concerning religiosity and hagioptasia. Apparently, the level of Achievement/Recognition in nonreligious persons is not all that different from what is found in many religious persons.

The other failed prediction concerned sex and the Achievement/Recognition component of hagioptasia. The results here were precisely opposite of that predicted by theory, with females scoring higher than males in Achievement/Recognition. In hindsight, it was simplistic to assume that men would score higher than women on Achievement/Recognition just because seeking status is a male mating strategy. Women are also interested acquiring status, but they usually do this by choosing mates with high status. The vaguely defined goals of our hagioptasia items (e.g., "I often feel a strong desire for success without being able to figure out what I want to be successful at") are open-ended enough to cover both the status symbols typically desired by men (prestigious job, making a lot of money) and the typical desire of women for a high-status mate (Buss, 1989; Sprecher, Sullivan, &

Hatfield, 1994). From this perspective, the higher scores of women on this component are actually consistent with the fact that female music groupies far outnumber male music groupies (Coates, 2007; Williams, 2011).

Because our theory states that the hagioptasic "specialness" that people desire to achieve is an elusive, ineffable quality, we believe that the vague wording of our Achievement/Recognition items is appropriate. The portion of our theory that was incorrect was reducing the hagioptasic desire for achievement and glory to the male drive for status. Therefore, in this case, a failed prediction led to a reconsideration of a portion of the theory rather than a decision to discard items and write new ones.

In the realm of Holland vocational interests, the predicted, discriminant pattern of relations with hagioptasia components was confirmed. Whereas overall hagioptasia correlated significantly with both Artistic and Enterprising vocational interests, the Aesthetic Wonder component of hagioptasia entirely accounted for the significant correlation with Artistic vocational interests. The correlation between hagioptasia and Enterprising vocational interests was primarily due to the Achievement/Recognition component of hagioptasia.

Predictions concerning other vocational interests and hagioptasia were not made; however, Social interests correlated significantly with Aesthetic Wonder, while Investigative interests correlated significantly in a negative direction with Achievement/Recognition. Social types do tend to be religious, which might explain the relation to hagioptasia. The negative correlation between Investigative scores and Achievement/Recognition is consistent with the literature on Investigative types' lack of interest in conventional status symbols (Holland, 1985).

4.5. Directions for future research

As we have emphasized throughout this article, we do not claim to have produced a well-validated scale for measuring hagioptasia. This article is intended to be an introduction to hagioptasia theory and a demonstration of the interplay between theory and scale development. The acceptable reliabilities of our preliminary hagioptasia scale and its two components as well as a number of confirmed predictions about associations with other variables do represent some cause for optimism about the measurability of hagioptasia and the verisimilitude of hagioptasia theory. However, future research on hagioptasia should include authoring and testing additional hagioptasia items, especially better reverse-scored items, and comparing hagioptasia scores to measures of constructs that might be similar or related to hagioptasia, discussed in Section 1.2 of this article, as well as a measure of the five major factors of normal personality.

We also believe that future research should examine the relation between hagioptasia and psychological well-being. In his analysis of the related construct, *Sehnsucht*, C. S. Lewis concluded that the inability to acquire what one desires inevitably causes disappointment and pain. Nonetheless, even though the inconsolable longing is painful, Lewis is absolutely certain that the momentary glimpse of otherworldly specialness brings a joy that makes the pain worthwhile. We concur that in hagioptasia the impossibility of obtaining the specialness that lies just out of reach almost inevitably brings sadness. Furthermore, the belief that others *have* obtained that specialness can cause envy and jealousy. Our sense is that hagioptasia, because it is based on the illusion of specialness, is almost always more negative than positive. However, this hunch needs to be tested by additional research that compares hagioptasia scores with scores on standard measures of psychological health such as neuroticism, self-esteem, and life satisfaction.

The experience of hagioptasia is mysterious and can be difficult to understand. People who appear glamorous have a mystique about them, and the attraction people have toward their heroes is like falling in love with someone without understanding why. When it comes to the highly subjective and ambiguous areas of art and fashion, it is hard to articulate what makes current high fashion so special, and how it is that what is so special today can die and be totally replaced by a different fashion tomorrow. C. S. Lewis contemplated for years how his brother's miniature garden of twigs, moss, and flowers in a biscuit tin could create in him such a powerful feeling of awe and longing. We believe that these hagioptasic experiences can be understood in terms of evolved psychological mechanisms that originally focused our ancestors' attention on aspects of their environment vital to their survival. Today our attention continues to be captured, not only by similar features of nature, but by supernormal representations of nature found in art and by cultural symbols signifying extraordinary status. Our hope is that a better understanding of hagioptasia will help people to use their hagioptasic experiences constructively.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.paid.2020.109919.

References

Abeta, A. A., & Routledge, C. (2018). The need for meaning and religiosity: An individual differences approach to assessing existential needs and the relation with religious commitment, beliefs, and experiences. *Personality and Individual Differences, 123*, 6–13. https://doi.org/10.1016/j.paid.2017.10.038.

Anderson, C., Hildreth, J. A. D., & Howland, L. (2015). Is the desire for status a fundamental human motive? A review of the empirical literature. *Psychological Bulletin, 141*, 574–601. https://doi.org/10.1037/a0038781.

Arias, M. (2019). Neurology of ecstatic religious and similar experiences: Ecstatic, orgasmic, and musicogenic seizures. Stendhal syndrome and autoscopic phenomena. *Neurología, 34*, 55–61. https://doi.org/10.1016/j.nrleng.2016.04.012.

Aron, A., Fisher, H., Mashek, D. J., Strong, G., Li, J., & Brown, L. L. (2005). Reward, motivation, and emotion systems associated with early-stage intense romantic love. *Journal of Neurophysiology, 94*, 327–337. https://doi.org/10.1152/jn.00838.2004.

Barrett, D. (2010). *Supernormal stimuli: How primal urges overran their evolutionary purpose*. New York: Norton.

Baumeister, R. F. (1991). *Meanings of life*. New York: Guildford.

Bear, D. M., & Fedio, P. (1977). Quantitative analysis of interictal behavior in temporal lobe epilepsy. *Archives of Neurology, 34*, 454–467. https://doi.org/10.1001/archneur.1977.00500200014003.

Briggs, S. R., & Cheek, J. M. (1986). The role of factor analysis in the development and evaluation of personality scales. *Journal of Personality, 54*, 106–148. https://doi.org/10.1111/j.1467-6494.1986.tb00391.x.

Burisch, M. (1984). You don't always get what you pay for: Measuring depression with short and simple versus long and sophisticated scales. *Journal of Research in Personality, 18*, 81–98. https://doi.org/10.1016/0092-6566(84)90040-0.

Buss, D. M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences, 12*, 1–49. https://doi.org/10.1017/S0140525×00023992.

Cheng, J. T., Tracy, J. L., & Henrich, J. (2010). Pride, personality, and the evolutionary foundations of human social status. *Evolution and Human Behavior, 31*, 334–347. https://doi.org/10.1016/j.evolhumbehav.2010.02.004.

Coates, N. (2007). Teenyboppers, groupies, and other grotesques: Girls and women and rock culture in the 1960s and early 1970s. *Journal of Popular Music Studies, 15*, 65–94. https://doi.org/10.1111/j.1533-1598.2003.tb00115.x.

Costa, P. T., Jr., & McCrae, R. R. (2010). Domains and facets: Hierarchical personality assessment using the Revised NEO Personality Inventory. *Journal of Personality Assessment, 64*, 21–50. https://doi.org/10.1207/s15327752jpa6401_2.

Dolgoff-Kaspar, R., Ettinger, A. B., Golub, S. A., Perrine, K., Harden, C., & Croll, S. D. (2011). Numinous-like auras and spirituality in persons with partial seizures. *Epilepsia, 52*, 640–644. https://doi.org/10.1111/j.1528-1167.2010.02957.x.

Evans, J. (2014). C.S. Lewis, Thomas Wolfe, and the transatlantic expression of Sehnsucht. *Inklings Forever: Published Colloquium Proceedings 1997–2016*. 9 (Article 5), 1–7. Available at https://pillars.taylor.edu/inklings_forever/vol9/iss1/5 9, 1–7 .

Fisher, M. (1976–77,. Winter). Thomas Weiskel, the romantic sublime: Studies in the structure and psychology of transcendence. Blake/An Illustrated Quarterly, 10, 93–95.

Hogan, R., & Nicholson, R. A. (1988). The meaning of personality test scores. *American Psychologist, 43*, 621–626. https://doi.org/10.1037/0003-066X.43.8.621.

Holland, J. L. (1985). *Making vocational choices: A theory of vocational personalities and work environments*. Englewood Cliffs, NJ: Prentice-Hall.

Johnson, J. A. (2012). I want to believe: Why even the smartest among us fall for the illusion of purpose [Review of the belief instinct: The psychology of souls, destiny, and the meaning of life by Jesse Bering]. *The Evolutionary Review: Art, Science, Culture, 3*, 15–22.

Jung, C. G. (1947). In R. F. C. Hull (Vol. Ed.), *On the nature of the psyche. from Collected Works: 8*, (pp. 159–234). Princeton: Princeton University Press.

Kotter-Grühn, D., Scheibe, S., Blanchard-Fields, F., & Baltes, P. B. (2009a). Developmental emergence and functionality of Sehnsucht (life longings): The sample case of

involuntary childlessness in middle-aged women. *Psychology and Aging, 24*, 634–644. https://doi.org/10.1037/a0016359.
Kotter-Grühn, D., Wiest, M., Zurek, P. P., & Scheibe, S. (2009b). What is it we are longing for? Psychological and demographic factors influencing the contents of Sehnsucht (life longings). *Journal of Research in Personality, 43*, 428–437. https://doi.org/10.1016/j.jrp.2009.01.012.
Leonti, M., & Cosu, L. (2018). Ethnopharmacology of love. *Frontiers in Pharmacology*. https://doi.org/10.3389/fphar.2018.00567 Online publication.
Lewis, C. S. (1933). *The pilgrim's regress*. London: J. M. Dent & Sons.
Lewis, C. S. (1952). *Mere Christianity*. London: Geoffrey Blesing.
Lewis, C. S. (1955). *Surprised by joy: The shape of my early life*. London: Harcourt Brace Jovanovich.
McCall, W. A. (1922). *How to measure in education*. New York: MacMillan.
Mealey, L., & Theis, P. (1995). The relationship between mood and preferences among natural landscapes: An evolutionary perspective. *Ethology and Sociobiology, 16*, 247–256. https://doi.org/10.1016/0162-3095(95)00035-J.
Miller, T. (1995). *How to want what you have: Discovering the magic and grandeur of ordinary existence*. New York: Henry Holt.
Mills, J. (2013). Jung's metaphysics. *International Journal of Jungian Studies, 5*, 18–43.
Murray, S. L., Griffin, D. W., Derrick, J. L., Harris, B., Aloni, M., & Leder, S. (2011). Tempting fate or inviting happiness? Unrealistic idealization prevents the decline of marital satisfaction. *Psychological Science, 22*, 619–626.
Persinger, M. A. (1983). Religious and mystical experiences as artifacts of temporal lobe function: A general hypothesis. *Perceptual and Motor Skills, 57*, 1255–1262. https://doi.org/10.2466/pms.1983.57.3f.1255.
Pincus, A. L., Ansell, E. B., Pimentel, C. A., Cain, N. M., Wright, A. G. C., & Levy, K. N. (2009). The initial construction and validation of the Pathological Narcissism Inventory. *Psychological Assessment, 21*, 365–379. https://doi.org/10.1037/a0016530.
Saver, J. L., & Rabin, J. (1997). The neural substrates of religious experience. *Journal of Neuropsychiatry, 9*, 498–510. https://doi.org/10.1176/jnp.9.3.498.
Scheibe, S., Blanchard-Fields, F., Wiest, M., & Freund, A. M. (2011). Is longing only for Germans? A cross-cultural comparison of Sehnsucht in Germany and the United States. *Developmental Psychology, 47*, 603–618. https://doi.org/10.1037/a0021807.
Scheibe, S., Freund, A. M., & Baltes, P. B. (2007). Toward a developmental psychology of Sehnsucht (life longings): The optimal (utopian) life. *Developmental Psychology, 43*, 778–795. https://doi.org/10.1037/0012-1649.43.3.778.
Shiota, M. N., Keltner, D., & John, O. P. (2006). Positive emotion dispositions differentially associated with Big Five personality and attachment style. *Journal of Positive Psychology, 1*, 61–71. https://doi.org/10.1080/17439760500510833.
Spörrle, M., & Bekk, M. (2014). Meta-analytic guidelines for evaluating single-item reliabilities of personality instruments. *Assessment, 21*, 272–285. https://doi.org/10.1177/1073191113498267.
Sprecher, S., Sullivan, Q., & Hatfield, E. (1994). Mate selection preferences: Gender differences examined in a national sample. *Journal of Personality and Social Psychology, 66*, 1074–1080. https://doi.org/10.1037/0022-3514.66.6.1074.
Strauss, M. E., & Smith, G. T. (2009). Construct validity: Advances in theory and methodology. *Annual Review of Clinical Psychology, 5*, 1–25. https://doi.org/10.1146/annurev.clinpsy.032408.153639.
Sarrocco, C. (2011, May). Surprised by awe. Touchstone, 24.03, Retrieved from https://www.touchstonemag.com/archives/article.php?id=24-03-036-f.
Tennov, D. (1979). *Love and limerence: The experience of being in love*. New York: Stein & Day.
Trimble, M., & Freeman, A. (2006). An investigation of religiosity and the Gastaut–Geschwind syndrome in patients with temporal lobe epilepsy. *Epilepsy & Behavior, 9*, 407–414. https://doi.org/10.1016/j.yebeh.2006.05.006.
Walters, S. (1994). Algorithms and archetypes: Evolutionary psychology and Carl Jung's theory of the collective unconscious. *Journal of Social and Evolutionary Systems, 17*, 287–306. https://doi.org/10.1016/1061-7361(94)90013-2.
Williams, M.E. (.2011). Why don't female rock stars have groupies? *Salon*. Downloaded fromhttps://www.salon.com/2011/02/22/neko_case_male_groupies/.
Wolfe, R. N. (1993). A commonsense approach to personality measurement. In K. H. Craik, R. Hogan, & R. N. Wolfe (Eds.). *Fifty years of personality psychology* (pp. 269–290). New York: Plenum. https://doi.org/10.1007/978-1-4899-2311-0_19.
Woolley, J. D. (1997). Thinking about fantasy: Are children fundamentally different thinkers and believers from adults? *Child Development, 68*, 991–1011. https://doi.org/10.2307/1132282.
Wright, A. G., Lukowitsky, M. R., Pincus, A. L., & Conroy, D. E. (2010). The higher order factor structure and gender invariance of the Pathological Narcissism Inventory. *Assessment, 17*, 467–483. https://doi.org/10.1177/1073191110373227.
Yaden, D. B., Haidt, J., Hood, R. W., J.r., Vago, D. R., & Newberg, A. B. (2017). The varieties of self-transcendent experience. *Review of General Psychology, 21*, 143–160. https://doi.org/10.1037/gpr0000102.
Yaden, D. B., Kaufman, S. B., Hyde, E., Chirico, A., Gaggioli, A., Zhang, J. W., et al. (2019). The development of the Awe Experience Scale (AWE-S): A multifactorial measure for a complex emotion. *The Journal of Positive Psychology, 14*, 474–488. https://doi.org/10.1080/17439760.2018.1484940.