CHAPTER 21

Transcending the Self

Awe, Elevation, and Inspiration

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As described by Western science, emotion is fundamentally about the self. While major theories of emotion differ in many important regards, most agree that emotions reflect an “assessment of one’s own current state” (Russell, 2003, p. 149) and/or evaluation of the significance of events for one’s goals and well-being (e.g., Lazarus, 1991; Scherer, 2009). Positive emotions are no exception. Theories of positive emotion and analyses of its neural substrates often emphasize key roles in identifying goal-conducive situations and promoting approach/appetitive states that support acquisition of material and social rewards (e.g., Burgdorf & Panksepp, 2006; Carver & White, 1994; Knutson & Cooper, 2005; Watson, Wiese, Vaidya, & Tellegen, 1999). Even the social emotions of pride in our accomplishments, love for attachment figures, and gratitude toward those who have helped us are arguably self-focused, reflecting on our own actions or what others do for us (Haidt & Morris, 2009).

Emotions also tend to turn attention inward. Negative emotions lead to an

increase in self-focused attention, as measured by use of first-person pronouns in sentence-completion tasks (e.g., Salovey, 1992; Salovey & Rodin, 1985; Wood, Saltzberg, & Goldsamt, 1990). Positive emotions have this effect as well, provided that participants are not anticipating a subsequent task that might elicit performance concerns (e.g., Abele, Silvia, & Zöller-Utz, 2005; Silvia & Abele, 2002). Positive emotion is thought to increase reliance on internal knowledge structures and dominant modes of cognition, another way in which the mind can turn inward rather than out to the environment (e.g., Bless, Bohner, Schwarz, & Strack, 1990; Bodenhausen, Kramer, & Süsser, 1994; Fiedler, 2001; Forgas, 1998; although see Fredrickson, 2001, for a different perspective).

The emotions (awe, elevation) and emotional state (inspiration) addressed in this chapter are thought to do the opposite, turning our minds outward rather than inward, encouraging us to transcend the self and its expectations. While they differ from each other in important ways, awe, elevation,

and inspiration all involve challenging our expectations about what is and what can be. They pull attention outside the self toward something to be understood and appreciated—a feature of the natural world, the actions of another human being, a practical or creative problem to be solved. Moreover, they draw attention to that which is greater than the self, inviting us to transcend our day-to-day agendas and limits. In this chapter we discuss each of these three constructs, offering a detailed theoretical description, as well as reviewing the available empirical evidence. We then discuss broader issues raised by awe, elevation, and inspiration, offering suggestions for future research on these relatively understudied states.

Awe

Albert Einstein once said, “One cannot help but be in awe when contemplating the mysteries of eternity, of life, of the marvelous structure of reality. It is enough if one tries merely to comprehend a little of the mystery every day. The important thing is not to stop questioning; never lose a holy curiosity” (statement to William Miller, as quoted in Einstein’s obituary in *Life* magazine, May 2, 1955). Like other great thinkers, Einstein highlights the transcendence of one’s current understanding as a core feature of awe in this comment, and also points the way to important functions that awe might serve.

Theoretical Definition

Drawing extensively on literature in philosophy, sociology, and religious studies, as well as psychology, Keltner and Haidt (2003) proposed a theoretical definition of “awe.” Their analysis identifies two themes characterizing stimuli that are likely to elicit the experience of awe: perceived vastness and need for accommodation. “Vastness” means that the stimulus strongly challenges the perceiver’s accustomed frame of reference. While this may be a matter of sheer physical size (e.g., the Grand Canyon or the Eiffel Tower), a stimulus can also be vast in terms of explanatory power (e.g., a theory of physics), social import (e.g., a person or historical event that affects millions of people), sensory detail (e.g., a complex musical

or visual piece), conceptual breadth (e.g., a work of art or literature that ties together a rich range of ideas, breaking new conceptual ground), or volume of unexpected information (e.g., the drop of pond water that contains an elaborate world of its own). Because such stimuli are not easily accounted for by one’s current understanding of the world, they require “cognitive accommodation”—updating one’s worldview in order to include and make sense of the new experience.

Consideration of awe as a possible “basic” emotion—a functionally discrete emotion category thought to be a product of our evolutionary heritage (see Shiota, Chapter 3, this volume)—was long prevented by inability to identify a plausible adaptive function. However, Keltner and Haidt (2003) proposed two ways in which awe might enhance fitness. The first of these is suggested by Einstein’s comment, quoted earlier. At the individual level of analysis, the cognitive and behavioral effects of awe should promote greater encoding of new information from the environment, or cognitive accommodation. All animals require knowledge about their environment in order to survive. We humans may be unique in the extent of our ability to gather new information from our surroundings, however, and to store that information in the form of internal mental representations or “schemas” (Piaget, 1973). Schemas are efficient and protective, allowing us to apply old knowledge to new situations and mentally “test out” possible plans of action without actually performing those actions and facing their consequences. However, when old schemas cannot make sense of a new stimulus or experience, a new one must be formed.

If the definition of awe offered earlier is correct, awe should reduce reliance on existing schemas, heuristics, and other current knowledge structures in processing new stimuli, and instead facilitate the intake of new information and formation of new schemas. Notably, this is the opposite of previously observed effects of positive emotions, which typically have been found to promote *greater* reliance on prior schemas and other mental shortcuts in approaching the environment (e.g., Bless et al., 1990; Bodenhausen et al., 1994; Fiedler, 2001; Forgas, 1998). As we see below, this aspect of Keltner and

Haidt's (2003) theory has been highly useful in generating empirical research.

At the group level of analysis, feelings of awe toward powerful leaders may help stabilize social hierarchies by encouraging submissive and cooperative behavior among subordinates. As a species, humans are "ultrasocial," performing many tasks that are crucial for survival and reproductive fitness (food acquisition and production, protection against attack by predators and outgroups, creating shelter, raising offspring) in large groups of loosely related individuals (Campbell, 1983). Large groups require leadership to be effective, but conflict over leadership can be costly for both the group and the individuals in it. Drawing from philosophical and sociological accounts, Keltner and Haidt (2003) suggest that one function of awe is to provide a nonviolent mechanism for allocating power, in which potential or actual leaders use awe-inspiring displays to elicit buy-in from their communities. While this proposal has not, to date, been translated into much psychological research, it is consistent with observations in sociology and cultural anthropology (e.g., Durkheim, 1887/1972; Weber, 1978/2002).

Empirical Research

Like the other constructs addressed in this chapter, awe has received far less empirical attention than positive emotions such as joy/enthusiasm, contentment, amusement, love and pride. Nonetheless, the research currently available for review supports the theoretical portrait offered earlier.

Antecedents

English speakers report that awe is elicited by the kinds of stimuli suggested by Keltner and Haidt's (2003) analysis, and by the construct definition proposed earlier. In one study a sample of undergraduates was invited to describe a recent event in which they felt awe, without further suggestion about type of experience (Shiota, Keltner, & Mossman, 2007). The most commonly reported elicitors were panoramic nature views, extraordinary works of art or music encountered for the first time, and one's own or another's remarkable accomplishment. Notably, all of

the eliciting events were described in positive terms, and all emphasized some aspect of vastness in the experience. Even descriptions of potentially negative or primarily social events (e.g., death of a grandparent, a friend's marriage) focused on the magnitude of the life transition in question and the impossibility of knowing what would follow, rather than personal loss or social pleasure. Descriptions of participants' own accomplishments as awe elicitors emphasized amazement bordering on disbelief, rather than pride. These descriptions are highly consistent with the conceptual definition of awe suggested by Keltner and Haidt (2003).

Subjective Experience and Individual Differences

The subjective experience of awe is also consistent with the notion of self-transcendence. Compared with those asked to relive a personal pride-inducing accomplishment, those asked to relive an awe-inspiring natural scene report significantly greater feelings of awe, love, rapture, and contentment, as well as feeling that the self is small or insignificant, sensing the presence of something greater than the self, being unaware of normal day-to-day concerns, feeling connected with the surrounding world, and wanting to prolong the experience as long as possible (Shiota et al., 2007). Awe experiences were *not* rated as challenging or tiring (in fact, they were rated significantly less so than accomplishments), suggesting that the kind of cognitive activity involved in awe does not require effortful, controlled processing. Correlations of dispositional awe-proneness with Extraversion ($r = .34$), Openness to Experience ($r = .49$), and Need for Cognitive Closure ($r = -.39$) also link awe to a tendency to push one's own experiential and intellectual boundaries (Shiota, Keltner, & John, 2006; Shiota et al., 2007).

Physiological and Expressive Aspects

Physiological and expressive aspects of awe have not been widely studied. The one study that explicitly compared autonomic nervous system responding in awe versus other positive emotions and a neutral state found that

awe led to a pronounced and unique increase in cardiac prejection period, indicating withdrawal of sympathetic nervous system influence on the heart via β_1 -adrenergic receptors (Shiota, Neufeld, Yeung, Moser, & Perea, 2011; see Figure 21.1). This effect is consistent with prior studies demonstrating heart rate reduction during the intake of information (Bradley, 2009). In this study awe was also associated with an increase in respiration rate and decrease in respiratory sinus arrhythmia.

Feelings of goosebumps or “goosetingles” are also commonly associated with the experience of awe (e.g., Maruskin, Thrash, & Elliot, 2012; Schurtz et al., 2012). Although, to our knowledge, this effect has yet to be examined via objective measures of physiological responding, the subjective sense of goosetingles in awe likely reflects contraction of piloerector muscles, making body hair stand on end and literally producing goosebumps. Piloerection is caused by activation of α_1 -adrenergic receptors on these muscles via the sympathetic nervous system—a different mechanism from that driving the cardiac effect described earlier. If future, laboratory-based evidence con-

firms a consistent role of piloerection in awe, this would suggest a novel and complex autonomic profile. Much further research is needed to document the physiological aspects of awe, and to assess whether these aspects play a role in mediating effects of awe on cognitive outcomes.

A recent study also documented a prototype facial/postural expression associated with awe. Participants were asked to recall a personal experience with awe (as well as several other positive emotions), then to freely pose the way they would express awe to others. Posed expressions commonly included raised inner (but not outer) eyebrows, raised eyelids, loosely opened mouth with parted lips, and slight postural leaning forward (Campos, Shiota, Keltner, Gonzaga, & Goetz, 2013; see Figure 21.1). The absence of an outer brow raise distinguished this expression from the prototypical surprise expression (e.g., Ekman et al., 1987), although both may facilitate intake of visual information. The absence of a smile (Duchenne or otherwise) is striking in comparison with expressions of most other positive emotions and may emphasize the primarily cognitive rather than affiliative nature of awe.

FIGURE 21.1. Prototype facial expression and baseline-to-trial change in cardiac prejection period associated with awe. Prototype facial expression is based on data from Campos, Shiota, Keltner, Gonzaga, and Goetz (2013). Graph of change in cardiac prejection period is reprinted with permission from Shiota, Neufeld, Yeung, Moser, and Perea (2011). Copyright 2011 by the American Psychological Association. Reprinted by permission.

Implications for Cognition, Perception, and Self-Concept

So far, the bulk of empirical research on awe has emphasized this emotion's effects on cognition, perception, and self-concept. Although this research is still very young, some studies already support the proposal that awe inhibits reliance on previously held schemas, mental heuristics/shortcuts, and other internal knowledge structures in processing new information. For example, one set of studies found that participants who had just completed an awe-induction task were less influenced than those in a neutral condition by persuasive messages containing several weak arguments (Griskevicius, Shiota, & Neufeld, 2010). Previously, other positive emotions had been found to *increase* one's susceptibility to weak but prolific persuasive messages relative to a neutral control, indicating reliance on a simple "more is better" heuristic. Griskevicius and colleagues (2010) replicated this original finding with anticipatory enthusiasm, amusement, contentment, and love for attachment figures, but awe showed the opposite effect. Preliminary studies are also finding that awe, relative to other positive emotions, leads to reduced reliance on stereotypes in rating the personalities of people in fictional profiles (Yee & Shiota, 2013), as well as a more conservative bias in deciding whether or not specific details were present in a lengthy audio story about a common event—going out to dinner at a romantic restaurant (Danvers & Shiota, 2013).

Much further research is needed to examine the implications of awe for activation and use of internal knowledge structures, such as mental schemas, and to establish the specific mechanisms and boundary conditions of these effects. In developing this research, it is important to note that demonstrating reduced reliance on prior knowledge structures does not necessarily demonstrate *increased* effective intake of information from the environment; these processes are dissociable and must be demonstrated using different measures.

Studies of schema/heuristic activation emphasize the "need for accommodation" aspect of awe. Other studies of cognitive outcomes have emphasized the "vastness"

aspect of the awe experience. Experimentally elicited awe has been found to alter the self-concept in a way consistent with this proposed aspect, increasing the number of "universals" such as "I am a human" and "I am a living being" offered by participants as self-descriptors in the Twenty Statements Test (Shiota et al., 2006), and increasing feelings of oneness with others "in general," as well as with personal friends (Van Cappel-len & Saroglou, 2012). Other studies have found that viewing awe-inspiring videos on nature and childbirth led to an increase in spirituality, defined as a "tendency to orient oneself toward a larger transcendent reality" (Saroglou, Buxant, & Tilquin, 2008, p. 169). This effect was not observed after participants viewed a comic video, and the effect did not extend to formal religiosity. Instead, awe appeared to have a distinctive effect on participants' sense of themselves as part of a vast, greater, and meaningful reality.

Most recently, new studies have examined the implications of awe for our perception of time, and the downstream effects of low time pressure for prosocial behavior and well-being (Rudd, Vohs, & Aaker, 2012). Across three studies, experimentally elicited awe was found to increase the perception of available time and reduce feelings of impatience. These changes mediated effects of awe on self-reported willingness to volunteer time to help others, preference for experiences rather than material objects, and life satisfaction. In interpreting these effects, Rudd and colleagues (2012) suggest that, as a consequence of need for accommodation, the experience of awe focuses our attention on the present moment, effectively stretching it out. Further research efforts examining the effects of awe on attention per se are suggested by this analysis, and mediation studies would be a helpful addition to this new line of research.

When asked to offer examples of things that elicit awe, laypeople and great thinkers alike tend to point to the natural world, or to physical creations that, though conceived and built by humans, give a sense of transcending human capacity. Awe may also have an amoral quality, in that vastness and need for accommodation may characterize great horrors as well as great beauty. We

now turn to a second self-transcending positive emotion, elevation, which places greater emphasis on social elicitors and the exemplification of moral values.

Elevation

When witnessing an exemplary moral act performed by another person, we may experience a powerful emotional response. Haidt (2000) has identified this response as the emotion *elevation*, “a warm, uplifting feeling that people experience when they see unexpected acts of human goodness, kindness, and compassion” (pp. 1–2). Keltner and Haidt (2003) propose that elevation shares with awe the feature of need for accommodation, but that elevation need not involve the perceptions of vastness or power that characterize awe. Elevation is most commonly elicited by others’ actions exemplifying virtues such as charity, gratitude, courage, and loyalty (Haidt, 2000; Landis et al., 2009).

Theoretical Definition

Theoretical analyses of elevation emphasize its role as a “moral emotion,” guiding our judgments of others’ morality and our own subsequent moral decision making in ways that bypass and may even precede logical moral reasoning (Haidt, 2001, 2003; Horberg, Oveis, & Keltner, 2011). In this sense, elevation may be the opposite of disgust, a negative emotion that frames the social world in terms of a contrast between degradation and moral purity, much as physical disgust emphasizes the contrast between disease or filth and cleanliness (Haidt, 2000, 2001; Rozin, Haidt, & McCauley, 2000).

This aspect of elevation points to a possible adaptive function. Elevation inspires us to help others, but it also helps those who experience it. As members of an ultrasocial species humans feel a need to belong, and we derive great adaptive benefit from cooperating with group members in interdependent relationships (Baumeister & Leary, 1995; Campbell, 1983). Emotions—especially positive emotions—can help support the process of forming and maintaining strong, healthy relationships of this kind (Shiota,

Campos, Keltner, & Hertenstein, 2004). At the individual level of analysis, elevation helps us to identify exemplary cooperators and good trade partners by triggering affection for those who display altruism (Haidt, 2000). People who prioritize other people’s interests are good relationship partners, and elevation may help point our attention toward these individuals (Frank, 1988). At the group level, elevation can help support community norms of helping. When one member of a group helps, other members are likely to see—and respond by helping yet other group members. Haidt (2000) likens this elevation-driven upward spiral of helping within the group to the upward spiral of individual positive emotion and well-being in Fredrickson’s (2001) broaden-and-build model (see Tugade, Devlin, & Fredrickson, Chapter 2, this volume).

Empirical Research

Although elevation was only recently proposed as a distinct positive emotion construct, research has identified several of its characteristics and effects. Elevation is most commonly elicited by “seeing someone else give help or aid to a person who was poor or sick, or stranded in a difficult situation” (Haidt, 2000, p. 2), but it may be evoked by actions exemplifying other moral values, particularly those emphasizing social connection (Haidt, 2000; Landis et al., 2009).

Individual Differences

The tendency to experience elevation may be a stable personality trait. Landis and colleagues (2009) examined the relationship of self-reported disposition to experience elevation with various personality traits, spirituality, and self-reported altruism in a sample of 188 undergraduates (Costa & McCrae, 1992; Piedmont, 2004; Rushton, Chrisjohn, & Fekken, 1981). While supporting the notion of individual differences in elevation-proneness, the research identified two distinct factors in this trait. Items loading heavily on “Elevation-Factor I” emphasized connectedness to others, whereas those loading on “Elevation-Factor II” emphasized physiological reactions experienced while witnessing acts of helping.

Importantly, these two factors were linked to somewhat different aspects of personality. Factor I (connectedness) predicted self-reported altruism, whereas Factor II (physiological reactions) did not. Instead, Factor II better predicted self-reported spiritual transcendence and Openness to Experience. Recent research using a modified version of the Elevation Scale suggests the possibility of a third factor emphasizing an affective component, which captures feeling like a better, more open person (Vianello, Galliani, & Haidt, 2010).

Physiological Aspects

Elevation has been associated with subjective physical sensations, such as feelings of warmth in the chest, as well as some objective physiological changes (Haidt, 2000; Silvers & Haidt, 2008). Thomas Jefferson once suggested that reading about virtue can elicit “dilation of the breast” (cited in Haidt, 2003, p. 275), but participants experiencing elevation in empirical studies also describe a feeling of warmth in the chest (Haidt, 2000; Schnall, Roper, & Fessler, 2010). The physiological mechanisms underlying this sensation have not yet been established and merit new research. Videos that inspire elevation have been found to produce a decrease in vagal parasympathetic influence on the heart (Silvers & Haidt, 2008), but it is not clear whether this would account for the subjective sensations of warmth described earlier. More research is needed to establish whether elevation has a distinctive physiological profile across a range of autonomic nervous system mechanisms.

Elevation may increase circulating levels of the hormone oxytocin, which is known to support lactation, as well as pair-bonding, in humans and a number of other mammals (Insel & Hulihan, 1995; Silvers & Haidt, 2008). In an indirect test of the hypothesis that elevation promotes oxytocin release, Silvers and Haidt (2008) asked nursing mothers and their babies to watch video clips inducing either elevation or amusement. Mothers watching the elevation video were more likely to nurse, leak milk into a nursing pad, and hug their children—all actions linked to oxytocin in prior research. Although replication with direct measure-

ment of oxytocin and comparison of elevation to a neutral control condition are both needed before strong conclusions are warranted, these results suggest one possible hormonal mechanism underlying physiological aspects of elevation.

Implications for Prosocial Behavior and Cooperation

The best-documented effect of elevation is its ability to inspire one's own prosocial behavior. Witnessing an altruistic act increases motivation to perform prosocial and affiliative actions, and views on humanity as a whole may improve (Haidt, 2000). In one set of experiments, participants watched either an elevation-inducing video clip, showing professional musicians expressing gratitude toward the teachers who had mentored them, or a neutral emotion video (Schnall et al., 2010). Those who saw the elevation video were more likely to volunteer to help with a subsequent, unpaid study. In a second study, participants viewed an elevation-inducing, neutral, or funny video clip and were then asked to help the experimenter by completing boring math problems for as long as they were willing, ostensibly for the purpose of establishing norms for the task. Participants in the elevation condition helped for significantly longer than those in either the humor or neutral conditions (41 minutes compared to 24 and 20 minutes). Importantly, helping time was strongly predicted by self-reported aspects of subjective elevation, such as wanting to help others and feeling optimistic about humanity, but not by overall positive affect. In addition to this laboratory-based, experimental research, a study of college students on a service trip found that those who reported more intense and frequent experiences of elevation during the trip performed more trip-related volunteer activities after returning (Cox, 2010).

Elevation elicited by a leader can affect followers' ethical inclinations, with downstream implications for cooperative behavior in and commitment to the workplace (Vianello et al., 2010). In one study, workers at an Italian company read scenarios about a fictitious leader. When the leader was described as interpersonally fair, workers reported higher intentions to perform

“Organizational Citizenship Behaviors” reflecting altruism, courtesy, and compliance at work, as well as greater affective commitment to their organization. In a study of nurses in a public hospital, the current supervisors’ fairness and tendency to self-sacrifice predicted elevation in the nurses under their management, which in turn predicted greater commitment and organizational citizenship intentions (mediation analyses demonstrated a significant effect). A similar effect was reported with a sample of preschool teachers.

Awe and elevation have typically been described by psychologists as possible “basic” or “discrete” emotions—complex packages of cognitive, physiological, expressive, and behavioral responses to particular kinds of eliciting situations, thought to serve fairly specific adaptive functions in the context of those situations. The next construct we discuss, inspiration, has not been conceptualized in this way. However, the experience of inspiration is rich with positive affect, and it is interesting to consider how inspiration might intersect with the experience of self-transcending positive emotions.

Inspiration

Although the intellectual history of inspiration is deep and broad, scientific research on inspiration began just in the last decade. According to the *Oxford English Dictionary*, inspiration can be defined as “a breathing in or infusion of some idea, purpose, etc. into the mind; the suggestion, awakening, or creation of some feeling or impulse, especially of an exalted kind” (Simpson & Weiner, 1989, p. 1036). Inspiration is not an emotion, although instances of inspiration are certainly emotion-laden (Thrash & Elliot, 2003, 2004). Whereas emotions are typically defined in terms of specific kinds of eliciting situations, such as “loss of a loved one” (sadness) or “observing acts of human goodness” (elevation), inspiration can be elicited by a wide variety of highly valued objects or events. Emotions are also thought to activate specific motivational goals. Inspiration involves an important motivational component, but the actual goal depends on the thing that elicited inspiration rather than

being inherent in the inspiration construct itself. Rather than an emotion, one may conceptualize inspiration as a psychological *state* that varies in intensity over time and across individuals. In this sense, inspiration may be present as an element in a variety of self-transcending positive emotions, including elevation, admiration, and awe. Moreover, it is helpful to think of inspiration as an *episode* including multiple processes that unfold across time.

Theoretical Definition

Thrash and Elliot (2003) proposed that three core characteristics are necessary and collectively sufficient to define the subjective state of inspiration in a way that distinguishes it from other constructs: transcendence, evocation, and approach motivation. “Transcendence” refers to gaining an awareness of possibilities that are better than the current state of affairs. “Evocation” refers to the passive manner by which inspiration occurs; one does not feel directly responsible for becoming inspired, and ascribes responsibility for inspiration to something beyond one’s own will. Finally, inspiration involves an intensified “approach motivation” that compels one to transmit, express, or actualize one’s new idea or vision.

Thrash and Elliot (2004) further proposed that an episode of inspiration can be decomposed into two conceptually and empirically distinct processes: being inspired *by* and being inspired *to*. Being inspired *by* refers to being moved by the perceived intrinsic value of an eliciting object, whether that object is a work of art, a creative idea, a role model, or other exemplar. Being inspired *to* refers to the motivation to transmit or extend the valued qualities exemplified in that object. These processes are linked differentially to the core characteristics of inspiration, such that being inspired *by* involves transcendence and evocation, and being inspired *to* involves approach motivation. This framing suggests a temporal sequence for the core characteristics of inspiration that has been helpful in guiding empirical research. Transcendence and evocation are intertwined as two aspects of the same process. As Thrash and Elliot put it, one cannot actively awaken oneself to better possibilities through an

act of will any more than one can awaken oneself from sleep; transcendence requires evocation. However, the inspired *by* process responsible for transcendence and evocation is separable from the inspired *to* motivational process to which it gives rise. While it is important to differentiate these two processes, disinterested *appreciation* of the evocative object (i.e., being inspired *by*) often sparks a nondisinterested *motivation* to transmit the qualities exemplified in that object (i.e., being inspired *to*). If such a desire is sparked, then a full episode of inspiration is present.

The proposed link between the inspired *by* and *to* processes highlights the function inspiration may serve. Specifically, inspiration is posited to mediate transmission of a perceived intrinsic value, exemplified by the inspiration-evoking stimulus, into future acts and/or creations (Thrash, Maruskin, Cassidy, Fryer, & Ryan, 2010). For instance, parents who are particularly selfless and caring (antecedent stimulus) are likely to be inspiring (mediator) to their children, who may in turn strive to be more selfless and caring themselves (future consequence). This mediation process may take any of several forms, depending on the nature of the evoking object—one may seek to *embody* a role model's virtue (as in the previous example), to *record* the content of a spiritual revelation, or to *actualize* a creative idea.

Whereas prior theorists have generally emphasized differences among *domains* of inspiration (e.g., creative, spiritual), distinguishing among these *forms* of transmission may do a better job of carving nature at its joints. For instance, the domain of "creative inspiration" is too heterogeneous to be regarded as a type of inspiration—being inspired to record a verse of poetry that comes to mind spontaneously is quite different from being inspired to embody some characteristic of a particular poet, such as Edgar Allen Poe. Likewise, the domain of "spiritual inspiration" is heterogeneous—a prophet's inspiration to record the content of a revelation as scripture is quite different from a reader's inspiration to be more Christ-like. Organizing these instances of inspiration by form of transmission rather than content domain, one sees important similarities between *recording* poetry and scripture (e.g., spontaneous insight, fol-

lowed by vigorous writing), and between *embodying* the virtues of Poe and Christ (e.g., admiration of a role model, followed by motivation to pursue a future self modeled after the role model).

Empirical Research

The theoretical model described earlier links diverse instances of inspiration, which may be superficially quite different, to a process that is fundamentally similar. Regardless of content domain and form of transmission, one is moved by an intrinsically valued stimulus object, then compelled to transmit its inspiring qualities to a new object. Empirical research has tested a number of these propositions regarding the construct of inspiration, as well as implications of inspiration for a variety of important outcomes.

Subjective Experience

Research on the subjective experience of inspiration has supported the construct validity of the theoretical model described earlier. In a study by Thrash and Elliot (2004), participants were asked to write about an occasion when they were inspired. Compared with control experiences, inspiration experiences were found to involve elevated levels of variables representing the proposed core characteristics of transcendence (e.g., spirituality), evocation (e.g., passive self), and approach motivation (e.g., activated positive affect [PA]). In subsequent studies, Thrash and Elliot contrasted inspiration with another appetitive state: activated PA. As expected, inspiration involved a comparable level of approach motivation but higher levels of transcendence and evocation. Thrash (2007) further differentiated inspiration and activated PA by documenting different distributions of these states across days of the week. Whereas activated PA was relatively stable across days of the week, inspiration declined on weekends. This divergence was most pronounced on Fridays, which apparently are more conducive to fun and leisure than to embodying virtue or channeling one's Muse.

The distinction between inspired *by* and *to* processes has also received empirical support (Thrash & Elliot, 2004). In a confirmatory factor analysis of state inspiration items,

being inspired *by* and being inspired *to* converged as indicators of a general inspiration construct, while still having the hypothesized distinct associations with indicators of transcendence, evocation, and approach motivation. Specifically, being inspired *by* was uniquely positively related to transcendence and evocation, whereas being inspired *to* was uniquely negatively related to transcendence and evocation, and uniquely positively related to approach motivation.

Antecedents

Research on the antecedents of inspiration has identified situations and states that function as proximal antecedents, as well as personality traits that function as distal antecedents. In some studies, proximal antecedents have been operationalized in terms of specific sources of intrinsic value in specific eliciting objects (e.g., extraordinary competence in role models; Thrash, Elliot, Maruskin, & Cassidy, 2010); in other studies, proximal antecedents have been operationalized in terms of more general insight or “illumination” experiences that are posited to accompany any of a variety of elicitor objects.

Thrash and Elliot (2004) proposed that the antecedents of inspiration are quite different than those of other appetitive states (e.g., activated PA) because inspiration begins with the nonmotivational process of being inspired *by*. They found that the tendency to become inspired in daily life was predicted proximally by the experience of illumination (but not by reward salience) and distally by openness-related traits (but not by approach temperament). The tendency to experience activated PA in daily life showed the opposite pattern; it was predicted proximally by reward salience and distally by approach temperament. Although approach temperament did not predispose individuals to become inspired more often, it did predict inspiration intensity and motivation strength during episodes of inspiration. In summary, consistent with the *by-to* distinction, openness-related traits predispose individuals to the kinds of illumination experiences that precede inspiration; once the individual is inspired by something, the approach temperament system is recruited to support motivation and action.

Thrash, Maruskin, and colleagues (2010) reported similar findings in the context of the creative process. In a cross-lagged analysis of data from a 5-week panel study, they found that creative insight early in the study preceded appraisals of inspiration at later time points during the writing process. Trait openness to aesthetics predicted creativity of individuals’ initial ideas, and in turn the tendency to feel inspired. Behavioral activation system (BAS) scale scores, an indicator of approach temperament, did not predict the creativity of initial ideas; rather, it amplified the effect of the creativity of this idea on inspiration. Across both these lines of research, openness-related traits predisposed individuals to the proximal elicitors of inspiration; thereafter, approach temperament facilitated inspired motivation.

Individual Differences

Thrash and Elliot (2003) developed and validated an 8-item trait questionnaire, the Inspiration Scale. This measure comprises four stem statements (e.g., “I feel inspired”), each of which is rated in terms of both frequency and intensity using 7-point Likert scales. The frequency and intensity subscales tend to be highly correlated and may be combined into an overall index of inspiration, but they may also be used individually to measure inspired *by* versus *to* processes as needed (Thrash & Elliot, 2004). Instructions may be adapted for assessment of inspiration over specified time periods, such as the prior week (Thrash, Maruskin, et al., 2010) or half-day (Thrash, Elliot, et al., 2010), or to assess inspiration in specific domains, such as stages of the creative process (Thrash, Maruskin, et al., 2010).

The Inspiration Scale has strong psychometric properties, demonstrating the expected frequency-versus-intensity two-factor structure suggested by the inspired *by* versus *to* distinction. Inspiration is also factorially distinct from activated PA, the strongest known correlate of inspiration. The Frequency and Intensity subscales, as well as the overall Inspiration Index, are internally consistent, with Cronbach alphas above .90. Scores on the two subscales predict inspiration frequency and intensity, respectively, as assessed using daily diary methods. Two-month test-retest reliabilities

are high, $r = .77$, for both subscales. Finally, the Inspiration Scale has invariant measurement properties (e.g., factor structure, loadings, and intercepts) across time (2 months) and across populations (university alumni, patent holders).

Trait inspiration, as assessed by the Inspiration Scale, converges meaningfully with a variety of individual difference variables. Regarding Big Five traits, Thrash and Elliot (2003) theorized that Openness to Experience should promote the process of being inspired *by*, whereas Extraversion, an indicator of approach temperament (Elliot & Thrash, 2002), should promote the process of being inspired *to*. As expected, Openness to Experience and Extraversion have consistently emerged as significant and robust predictors of trait inspiration (Thrash & Elliot, 2003; Thrash, Elliot, et al., 2010; Milyavskaya, Ianakieva, Foxen-Craft, Colantuoni, & Koestner, 2012). In contrast, Neuroticism, an indicator of avoidance temperament (Elliot & Thrash, 2002), has consistently failed to predict inspiration. Conscientiousness and Agreeableness have shown weak and sporadic relations to inspiration.

Those higher in trait inspiration are also higher in intrinsic motivation, BAS strength, absorption, work-mastery motivation, activated PA, optimism, perceived competence, self-esteem, and self-determination (Thrash & Elliot, 2003). Students higher in trait inspiration are more likely than those lower in trait inspiration to pursue majors in the humanities, and they pursue more majors simultaneously (Thrash & Elliot, 2003). These studies provide further support for the theoretical model of inspiration described earlier, with particular emphasis on the inspired *by* versus *to* processes.

Implications for Creativity, Productivity, and Well-Being

The transmission function of inspiration implies a variety of desirable consequences. Here we review evidence that inspiration leads to enhanced creativity, work efficiency and productivity, and well-being.

Findings from a number of studies support a relation between inspiration and creativity. Thrash and Elliot (2003) found that trait inspiration is positively related to a trait measure of creativity; moreover, inspira-

tion has a cross-lagged effect on subsequent self-reported creativity. Thrash and Elliot also found that frequency of felt inspiration among U.S. patent holders was related to the number of patents held, an objective indicator of creative output. In addition, patent holders were found to experience inspiration more frequently and intensely than individuals from a matched comparison sample.

In three studies by Thrash, Maruskin, and colleagues (2010), felt inspiration during the writing process was found to predict expert ratings of the creativity of the completed written products. These findings held regardless of the type of writing (scientific writing, poetry, mystery stories), research context (naturalistic, laboratory), and level of analysis (e.g., across persons, across written pages). Moreover, the findings were robust when a variety of covariates were controlled, including aptitude (e.g., Scholastic Aptitude Test [SAT] verbal scores), traits (e.g., openness), states (e.g., PA), behaviors (e.g., deletion), and other aspects of writing quality (e.g., technical merit).

We have noted that the creativity of a writer's initial idea is an antecedent of felt inspiration, and that the creativity of the completed product is a consequence, a pattern that is consistent with the posited transmission function. Thrash, Maruskin, and colleagues (2010) tested this transmission model directly in two studies. As expected, inspiration was found to mediate the relation between the creativity of the seminal idea and the creativity of the completed product. Other covariates of inspiration (effort, awe, activated PA) did not mediate transmission of creativity, suggesting that the transmission function is unique to inspiration.

Thrash, Maruskin, and colleagues (2010) also proposed that inspired action is likely to be efficient and productive because the inspiring object provides a concrete exemplar to serve as a guide. For instance, inspired writing is expected to proceed fluently because it is guided by a compelling idea; uninspired writing proceeds without such guidance, resulting in a more labored process. Thrash, Maruskin, and colleagues used a screen capture technique to test this proposal—"efficiency" was defined as the proportion of typed words that were retained in the completed product, and "productivity" was defined as the number of words

in the final product, after they adjusted for writing time. As predicted, inspiration while writing positively predicted both efficiency and productivity. It is noteworthy that this efficiency and productivity did not come at the cost of writing quality; indeed, inspiration predicted greater creativity in this same study.

Finally, Thrash, Elliot, and colleagues (2010) proposed that inspiration should promote psychological well-being. Two variables known to promote well-being were expected independently to mediate this effect: gratitude and purpose in life. Being inspired *by* was posited to promote a sense of gratitude toward the source of inspiration, and being inspired *to* was posited to instill a sense of direction and purpose. In one study, viewing a Michael Jordan highlight film was found to increase activated PA, and this effect was explained by inspiration. In two cross-lagged longitudinal studies, trait inspiration was found to lead to increases in a variety of positive well-being variables, such as activated PA, life satisfaction, vitality, and self-actualization. These findings held when a variety of covariates (e.g., the Big 5 traits, social desirability biases, and initial levels of well-being) were controlled. In a diary study, morning inspiration was found to predict evening levels of well-being variables. These effects were mediated partially by gratitude and partially by purpose. Milyavskaya and colleagues (2012) recently reported that trait inspiration predicts greater progress toward personal goals, and they proposed that goal progress may serve as an additional mediator of the relation between inspiration and well-being.

Conclusions and Future Directions

Psychological research on positive emotion was long delayed, compared with that on negative emotions such as fear, sadness, anger, and disgust, by difficulty identifying plausible adaptive functions that could provide a foundation for clear construct definition and hypothesis generation. While this has certainly changed in the new millennium, much research on positive emotion has solved the “function” problem by emphasizing its role in the immediate pursuit, acquisition, and consumption of material rewards.

Empirical research on positive emotion is still young enough that findings on this kind of positive emotion are sometimes generalized to all positive affect. One such finding was emphasized at the beginning of the chapter—the tendency for positive emotion to turn our focus inward toward the self, its assumptions and its needs. One of our key aims in this chapter was to describe three positive emotion/emotional constructs whose theoretical definitions predict sharp divergence from the characteristics of positive emotion in the context of short-term rewards. Awe, elevation, and inspiration all direct attention firmly outside the self, away from one’s mundane expectations and immediate needs. These three constructs do not exhaust the list of self-transcending emotional states. Compassion, amusement, and admiration, among others, may also focus attention away from the self (Haidt & Morris, 2009). What is distinctive about awe, elevation, and inspiration is the element of “breaking set” in terms of beliefs about what is possible, focusing attention not only outside the self but also on that which is greater than the self and beyond its perceived boundaries.

Moving beyond reward acquisition and personal need fulfillment as the basis for positive emotion need not undercut the potential for talking about these states in terms of adaptive function. In fact, proposed functionality was a key basis for hypotheses in each of the lines of research described here. Once we acknowledge that adaptiveness reflects “total lifetime fitness consequences” (Cosmides & Tooby, 2000, p. 96), as well as immediate consequences for survival, we open the door to emotional mechanisms that treat knowledge about the world, the well-being of other people, and the transmission of key social values as important fitness-relevant resources. Indeed, the broaden-and-build model emphasizes this aspect of the function of positive emotion—impact on *enduring* personal resources, not just short-term rewards (e.g., Fredrickson, 2001).

One more substantial challenge to framing these states in evolutionary terms lies in the very feature that binds them together. The notion of “breaking set” implies that a mental set is present in the first place, and that it can be broken based on new experience. This requires a number of cognitive

processes—schema formation, exemplar identification, abstract thinking, and so forth—that may be uniquely human. This feature presents something of a dilemma for theories of awe and elevation, which have been posited as emotional responses that (presumably) draw upon mechanisms with roots deep in our evolutionary past. To truly understand these states, it would help to know their origin, as well as their current form. To address this dilemma, theorists may need to consider these states as exaptations of more evolutionarily ancient processes. Such an approach could provide further guidance for hypotheses regarding overlap with other positive emotional states, some of which are already more widely studied.

As is clear from this overview, empirical research on self-transcending positive emotion is still very new, and has been limited to the efforts of a small number of laboratories. Potential future directions are many. Most research so far has been on social and cognitive implications of these states, but many gaps remain to be filled. Research on awe has emphasized a limited number of high-level cognitive processes (e.g., stereotyping, persuasion, and time perception), but these presumably entrain lower-level sensory and cognitive mechanisms that have not yet been explored. Research on elevation has emphasized effects on social intentions and behaviors, but further research on the psychological mechanisms mediating these effects is needed. Research on inspiration has emphasized the products of inspiration, consistent with the “transmission” model of this state’s function. However, there is much to learn about the process by which one becomes “inspired by” in the first place, and whether inspirational things have common elements or are idiosyncratic. Across all three of these states, research has often addressed one of these constructs at a time, rather than comparing them with other positive emotion constructs, or examining how they relate to each other. Beyond social and cognitive outcomes, there is very little objective research on the physiological or expressive aspects of these states, or on their central neural substrates.

These gaps in the current research are pointed out as opportunities rather than limitations. The self-transcending posi-

tive emotions, and emotional states such as inspiration, offer tremendous potential to enrich our understanding of the human condition. Emotions are often thought of as the bestial, selfish, irrational side of human nature. What if emotions also support the best human nature has to offer? Much work has yet to be done before we can answer this question.

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