Draw some awesome: the effect of art and awe on grief and giving

Jamie Katz

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Draw Some Awesome: The Effect of Art and Awe on Grief and Giving

by

Jamie Katz

Honors Thesis

in

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Advisor: Crystal Hoyt
Abstract

*Draw Some Awesome: The Effect of Art and Awe on Grief and Giving*

Jamie Katz

**Committee members:** Crystal Hoyt, Scott Allison, Kristin Bezio

Prior research has shown that awe can have positive psychological effects on people who experience it. We conducted two experimental trials to test whether awe can be evoked by art and whether this art induced awe can increase people’s charitable donations and decrease their grief in the face of losing an important relationship. We concluded that spectacular videos of art production were significant evokers of awe compared to their mundane control counterparts. We also found that the awe videos increased charitable donations through a mediating variable of feeling the “presence of something greater than oneself.” Lastly, we found that there was a significant interaction between experiencing awe and gender on grief. Men in the control condition reported significantly less grief than any other group of participants, suggesting that the awe video intervention has the power to increase grief reports for men.
Signature Page for Leadership Studies Honors Thesis

**Draw Some Awesome:**
The Effect of Art and Awe on Grief and Giving

Thesis presented

by

*Jamie Katz*

This is to certify that the thesis prepared by *Jamie Katz* has been approved by his/her committee as satisfactory completion of the thesis requirement to earn honors in leadership studies.

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Imagine a clear day, and you’re on a mountaintop looking out over a sweeping landscape that reaches farther than the eye can see. You feel small and insignificant in comparison to the vast beauty of the natural landscape. You start to wonder how the peaks came to form such magnificent shapes all around you, and your worries about your to-do list and the hustle and bustle of your daily responsibilities melt away. A feeling of awe connects you to something bigger than yourself and your petty thoughts seem to pale in comparison to the grandiose scenery. This awesome phenomenon has been a trending topic of study in modern day psychology. Awe is a powerful emotion that can create lasting impacts on the brain, and researchers are still discovering the outcomes that result from experiencing awe.

Awe is defined by Miriam Webster’s dictionary as “an emotion variously combining dread, veneration, and wonder that is inspired by authority or by the sacred or sublime” (“Awe | Definition of Awe by Merriam-Webster,” 2018). Awe is a bi-directional emotion, meaning that it can have positive or negative valence, that has remarkable influence on the human mind (Lichtenberg, 2015). Quintessentially, awe can be broken down into two unique parts: perceived vastness and mental accommodation. Awe has the potential to create permanent changes in the way a person experiences the world from that point forward. To evoke feelings of awe in a controlled, scientific setting could be a helpful step in creating mental health interventions.

**Psychological Effects of Experiencing Awe: An Overview**

Awe can be experienced in a number of different ways and elicited by myriad different things. Keltner and Haidt (2003) sorted awe elicitors into five different categories: threat, beauty, ability, virtue, and supernatural causality. One can imagine experiences in his or her life that have evoked awe and pretty easily place them into one or more of these categories. For example, the mountain scene described above would mainly fall into the beauty category but could also be
perceived as a supernatural act of some higher being depending on the viewer’s beliefs. Someone’s extraordinary ability to do a task can be awe-inspiring when it requires mental accommodation. For example, someone who is an extremely talented singer would likely elicit admiration, whereas someone who seems to defy gravity with their dance skills would elicit awe. Scientists can use these known categories of awe to produce fabricated awe experiences in a controlled environment like a lab or an online forum.

A fair amount of literature exists surrounding awe and the effects that it might have on people that are experiencing it. Many articles look at how sensing awe makes the subject feel other connected emotions or inclinations. For example, Stellar et al. (2018) found that feelings of awe implied more frequent feelings of humility. These humbled people in turn changed their behavior in certain scenarios to be more generous and group-focused. In addition, there is research connecting awe and perception of sense of time left to live (Rudd et al., 2012). This concept is especially interesting in different age groups. An older adult’s sense of time left to live has important implications for other behaviors like socio-emotional selectivity and emotional regulation in general (Carstenson, 2006). Another effect from feeling awe could be increased levels of self-concept and greater ability to connect oneself to the greater world (Piff et al., 2015). This in turn puts things into perspective and could allow the subject to experience more freedom and greater wellbeing.

Some research suggests that awe is meant to be experienced as a group emotion, and its function is to bond human beings to one another (Piff & Keltner, 2015). If this hypothesis is true, it could explain some of the other effects of awe like increased inclinations for pro-social behavior. Many experiments have found that when people are put in situations in which they experience awe, they are more likely to volunteer their time or donate money to charities (Sliwa, 2015). This goes along with the group-emotion hypothesis because it is a tangible demonstration
of people being more concerned for group needs than individual needs. Awe can also be a spiritual experience, and spiritual experiences are also seen as good psychological coping mechanisms with significant improvements to wellbeing (Keltner & Haidt, 2003). When experienced in a positive way, awe can have many beneficial and healthy outcomes on an individual’s life. Awe can be a mediating factor for feelings of humility, small-self, and connectedness (among other things) which in-turn can promote prosocial behaviors and healthier states of mind.

Awe Buffering Loss

In a study done by Koh et al. (2017), researchers looked at the effects of awe on feelings of loss. Participants were told to describe their favorite possession in enough detail that the researchers could picture its appearance and its significance. They were then randomly assigned to either the awe condition where they watched clips of sweeping ocean landscapes from BBC’s *Planet Earth* or a control condition where they were shown videos of marine life. Next, they were told to imagine their possession that was described earlier got lost, stolen, or destroyed. They rated their feelings of loss and unhappiness in a following survey, and the results between two groups were compared. The awe group had significantly reduced feelings of loss and unhappiness as compared to the control group. This study showed that experiencing awe can have buffering effects on feelings of loss surrounding a physical object. The researchers hypothesized that this effect was a result of the power that awe has to focus people on larger, more abstract connectedness rather than valuing material goods.

Our study takes the basic principle of using awe as a buffer to negative outcomes that Koh et al. (2017) discovered, but we attempt to expand the phenomenon and apply awe’s buffering powers to relationship loss rather than material loss. We predicted that awe would be able to lessen the negative outcomes of losing a relationship because it was an effective buffer in the
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face of possession loss and monetary loss that participants imagined in a laboratory setting. Relationships are often lost suddenly as a result of illness, injury, and distance, and losing a special person in one’s life can create much emotional stress, damage, and vulnerability. In their experiment, Koh et al. (2017) asked the participants to describe their most valued possession, but we asked our participants to describe a relationship that is extremely close and valuable to them. They described this relationship and the nature of it in enough detail that we can understand and can picture the intimacy and origin of it. They were then placed in either the awe condition or the control condition and asked to report their feelings, emotions, and reactions to losing this relationship afterwards. Another important difference is that our study takes place entirely online, and our participants will be Amazon Turk users rather than people who physically enter a laboratory setting. Our study looks to replicate the same basic buffering principle of awe that Koh and colleagues discovered, but we will expand on it in new and applicable ways in the realm of relationships.

Inducing Awe Through Art

We explored whether watching videos of people creating extraordinary art can evoke awe in viewers. In the research world, awe is an established emotion that is mostly elicited by vast nature scenes in controlled settings. We first and foremost set out to see if viewing art videos had the same effect as viewing clips from BBC’s *Planet Earth* to extend the methodology for evoking awe in a laboratory setting. Many times, creating art is more accessible than visiting spectacular places in nature. Viewing a piece of artwork can inspire awe for different reasons. Its subject matter can be extremely beautiful aesthetically, or it could contain subject matter that seems supernatural such as grandiose mountains, enhanced scenery, or vast outer space depictions. Alternatively, art can invoke awe because of the human talent it required in its creation. Research has shown that people feel awe when in the presence of human greatness or
extreme talent. We hope to show that viewing our selected art clips significantly evokes awe as opposed to other positive emotions like joy, gratitude, and amusement. We use short clips of people creating outstanding and interesting works of art to evoke awe in viewers, and we hypothesize the exceptional human skill demonstrated will conjure feelings of awe that require mental accommodation.

Art therapy has been gaining traction in the psychological and therapy realms. Art therapy uses creative expressions in the forms of drawing, painting, and sculpting to promote healing, growth, and self-esteem. It can be used to help conditions like depression, anxiety, PTSD, and developmental issues (“What is Art Therapy,” 2013). The act of creating art comes with expressive freedom and can be therapeutic in itself, but the practice harnesses specific tasks that can help with psychological diagnosis and focused interventions for particular disorders like autism and depression. Viewing art created by others can give someone insight on the artist’s thought processes behind the piece. Viewers may feel bewilderment at the honed technical skills needed to create the illusion of three-dimensionality on a two-dimensional plane. Art gives viewers a window into the artist’s mind, and it can inspire feelings of awe and wonder when executed well.

**Current Research**

Once we established that art videos elicit awe, we then tested whether those feelings of awe have therapeutic effects. With our significant results we can start to develop a therapy intervention targeted at specific demographics that can help with the coping process of losing a relationship. This therapy intervention could be useful for people who suffer traumatic losses or just losses in general. Everyone will experience a loss of some sort of close relationship at one point in her life. Whether a divorce, a tragic death of a loved one, losing touch with a close friend, or moving homes, there is heartbreak and loss involved with losing someone that you
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once treasured and depended on. Some of the biggest triggers and causes for mental illness are sudden loss of an important relationship, so if there is an effective intervention, the prevalence of these diseases and disorders can be potentially reduced. Everyone experiences loss, so we looked at whether awe helps to reduce some of the intense feelings and symptoms of grief that follow it and allow people to return to a healthy routine as soon as possible.

There are many previously mentioned mediating factors of awe that exist in the literature. Some of these include sense of time, humility, personality, resilience, and pro-social behavior tendencies. Instead of awe itself inspiring higher levels of happiness, awe might inspire a person to perform more selfless, prosocial deeds which in turn lead to happiness. Similarly, it could be increasing a person’s perceived sense of time and in turn creating higher levels of happiness as well. There are many different variables that could be at play, but we specifically looked at a person’s sense of “Small-self” and “Presence of something greater than yourself” as they relate to charitable giving.

We also investigated trends or significant differences in the individual traits of our participants that affected our results. Specifically, we found interesting patterns in our data that varied based on participants’ ages and genders. Through examining these differences, we can further focus our target population to know who would most benefit from our intervention. In addition, these individual differences give us insight into which mediating factors are at play. Since age plays a powerful role, it would seem like sense of time left to live is one of the more important mediating factors at play. Aside from age, the gender of our participants created a significant interaction with our condition variable. Our results showed us that our intervention worked exclusively on men, so we know that in future studies we should look for gendered results. Understanding how awe is experienced differently or if it has different effects on men
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and women is an important next step for creating therapy interventions centered around experiencing awe.

We have combined many of the properties of awe that have already been discovered. We encapsulate what the research already says about awe-evokers and the effect they have on people to create our own mental health and wellbeing intervention centered around art. We ultimately want a specific treatment intervention centered around awe that can improve psychological well-being in populations including but not limited to people with PTSD, depression, chronic pain, and anxiety. Our plan is to harness the positive aspects of awe from our study and use it to help people who are facing struggles. Awe has the potential to invoke a greater sense of wellbeing and happiness in people when it is presented in the right conditions.

We hypothesized that we can elicit awe using extraordinary videos of art production. Also, we predicted experiencing awe would lead to more willingness to donate time and money to charity. Lastly, we hypothesized that people in the awe condition would experience fewer negative symptoms associated with grief when faced with the loss of an important relationship. We suspected that there were factors mediating the relationship between experiencing awe and changes in a person’s emotions and behaviors. These factors included the sense of small-self and the presence of something greater than oneself. To gain additional insight into which mediating factors were central to the effectiveness of our awe intervention, we also analyzed individual differences of our participants for age and gender discrepancies. These individual differences also help us target our intervention to see if there is a specific population that would benefit the most from it. We hope to use this intervention as a source of therapy in the face of grief and loss to improve overall wellbeing especially of vulnerable populations like those diagnosed with PTSD, depression, anxiety, and other pre-existing psychological disorders.
Chapter 2: Methods

Study 1

Participants

Participants in this study included 150 Amazon Turk users (52% female; 72% white) in the United States recruited online who took the survey with an anonymous link. Each person was compensated 75 cents for their time.

Procedure

Participants were all recruited from the Amazon Turk user database and were told the study had to do with the emotional reactions they felt from the art they viewed. They were given an anonymous link to a Qualtrics survey that they took on their personal electronic devices in their own time. Participants were randomly assigned to either the experimental or control group. Both groups were given instructions to watch the videos on their screens before moving on to the next page to answer questions about their reactions. The participants then watched a series of six videos depicting different productions of artwork. The awe condition included sped-up time lapse works of art, use of unusual art materials like sand and pennies, and unexpected works like synesthesia paintings of music and paintings that could be flipped upside-down to reveal a new image. The control condition contained videos of similar subject matter, but these videos were less skillful, surprising, and grandiose. After each video, participants were prompted to report the extent that they were feeling the following things on a scale of 1-7: Awe, Contentment, Gratitude, Joy, Small or Insignificant, Pride, Amusement, and the Presence of something greater than yourself. Once they completed all six videos and their corresponding questionnaires, participants were prompted to enter their Turk ID numbers to ensure each person only participated once.

Measures
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Videos-- Awe condition

1. https://www.youtube.com/watch?v=bgnFl7vidGk Sand Cityscape
2. https://www.youtube.com/watch?v=HFj7vr7FGHY Speed Painting

Videos-- Control Condition

1. https://www.youtube.com/watch?v=CL_LHSU_oec Cityscape Tutorial
2. https://www.youtube.com/watch?v=gB9Eg1UnZ9s Speed Painting
3. https://www.youtube.com/watch?v=0RK3ysJzfTw Penny DIY Craft

Positive Emotions and Small-Self Questions

1. Report the extent to which you are currently experiencing feelings of (awe, amusement, contentment, gratitude, joy, pride, Small or Insignificance, Presence of Something Greater than Yourself) on a scale of 1-7 (1=not at all, 4=neutral, 7=extremely).

Study 2

Participants

Participants in this study included 300 Amazon Turk users (56% male; 75% white) in the United States recruited online who took the survey with an anonymous link. Each person was compensated 75 cents for their time.

Procedure

Participants were all recruited from the Amazon Turk user database and were told the study had to do with the emotional reactions they felt from the art they viewed. They were given an anonymous link to a Qualtrics survey that they took on their personal electronic devices in their own time. Participants were randomly assigned to either the experimental or control group.
Both groups were given questions assessing their perceived stress, psychological wellbeing, and dispositional awe. Next, participants were prompted to write a paragraph describing a relationship that they cherish in enough detail that another person could imagine it. Then, depending which group to which the participant was assigned, he/she watched a series of three videos. In the awe condition, the participants viewed the three videos that had the most significant effects from Study 1. The control group watched the corresponding videos from Study 1, as well. After watching all three videos, participants then answered the same questionnaire that followed each video in Study 1 asking them to rate their feelings on a scale of 1-7 in reaction to the videos. Next, participants were asked to imagine losing the person they described before they watched the videos. They were asked to rate on a 1-7 scale the extent they were feeling unhappy, upset, regretful, panic, and yearning. Next, they were asked about their likeliness to donate time and money to a charity that supports the arts. To assess if certain variables moderated the effects, participants were asked questions that assessed their past experiences with art creation, significant relationship loss, and religiosity. Lastly, they were asked about their age, gender, race/ethnicity, and whether or not they had a diagnosis of a psychological disorder. Subjects were debriefed on the purpose of the study and prompted to enter their Turk ID numbers to ensure their one-time participation.

Measures

Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly.
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That is, don’t try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

For each question choose from the following alternatives:

0. Never
1. Almost never
2. sometimes
3. fairly often
4. very often

1. In the last month, how often have you been upset because of something that happened unexpectedly?
2. In the last month, how often have you felt that you were unable to control the important things in your life?
3. In the last month, how often have you felt nervous and “stressed”?
4. In the last month, how often have you dealt successfully with irritating life hassles?
IN the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?
In the last month, how often have you felt confident about your ability to handle your personal problems?
in the last month, how often have you felt that things were going your way?
In the last month, how often have you found that you could not cope with all the things that you had to do?
In the last month, how often have you been able to control irritations in your life?
In the last month, how often have you felt that you were on top of things?
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In the last month, how often have you been angered because of things that happened that were outside of your control?

In the last month, how often have you found yourself thinking about things that you have to accomplish?

In the last month, how often have you been able to control the way you spend your time?

In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

Psychological Wellbeing Measures

Indicate on a scale of 1-7 (1=strongly disagree, 4=neutral, 7=strongly agree) how much you agree with the following statements

i. Self acceptance “I like most parts of my personality

ii. Positive relationships with others (maintaining close relationships has been difficult and frustrating for me

iii. Personal growth (for me, life has been a continual process of learning, changing, and growth)

iv. Purpose in life (I sometimes feel as if I’ve done all there is to do in life)

v. Environmental mastery (I am good at managing the responsibilities of daily life

vi. Autonomy (I tend to be influenced by people with strong opinions)

Dispositional Positive Emotion Scale

I often feel awe.

I see beauty all around me.

I feel wonder almost every day.
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I often look for patterns in the objects around me.

I have many opportunities to see the beauty of nature.

I seek out experiences that challenge my understanding of the world.

Thinking about A Relationship

Part 1. Think about a personal relationship that you cherish. It does not have to necessarily be someone that you are related to; it just must be someone important to you that you love. Describe this relationship in adequate detail, such that another person would be able to imagine it. How often do you interact? What are these interactions like? What kind of support or comfort do you find in this person? What is their relation to you? How did you meet? Etc.

Part 2. Now think back to the question where we asked you to describe a relationship. Imagine you have lost the person that you had described. The person could have died, become extremely incapacitated, or stopped communicating with you. Indicate on a scale 1-7 the extent to which you would feel the following emotions if you really did lose this person at this point in time.

- Unhappy
- Upset
- Regretful
- Panic
- Yearning

Prosocial Behavior Outcomes

1. How likely would you be to donate time to a charity that promotes the arts?

2. How likely would you be to donate money to a charity that promotes the arts?

3. If you answered “likely” to the last question, how much would you be willing to donate?
ART, AWE, GRIEF, AND GIVING

**Moderators**

1. How often do you engage in creative processes like painting, drawing, or sculpture?
2. How many significant losses (e.g. family member, close friend, relationship, etc.) have you faced during your life?
3. How recently have you experienced such a loss?
4. Indicate how much you agree with the following statement:
5. My faith in a higher power/universal intelligence helps me cope during challenges in my life

**Demographics**

1. Have you ever been diagnosed with a psychological disorder?
2. What is your race/ethnicity?
3. How old are you?
4. What is your gender?
Chapter 3: Results

Study 1

In comparison to the control videos, the chosen experimental videos evoked significantly more awe in participants for five out of the six video pairs ($p<.01$). The three videos with the largest mean awe score discrepancies were selected for use in study two. Awe video 1 showed an artist standing up a life-size, sand-covered canvas to reveal the New York City skyline created from grains of sand against the white canvas background and gold foil. This video evoked significantly more awe ($M=5.42; SD=1.50; p<.001$) than its control counterpart ($M=2.69; SD=1.83$) showing a step-by-step skyline painting tutorial. Awe video 2 showed an artist creating a seemingly mundane speed painting, but then she inverts the piece and throws chalk at it to reveal an extremely detailed portrait in the negative space. This video also evoked significantly more awe ($M=5.08; SD=1.71; p<.001$) than its control counterpart of an adolescent creating an inverting a simple speed painting portrait ($M=2.92; SD=1.91$). Lastly, awe video 3 showed an artist’s various intricate works of art using a penny as a canvas. This video evoked significantly more awe ($M=5.00; SD=1.66; p<.001$) than its control counterpart of a Do-It-Yourself penny craft to decorate a garden ($M=3.70; SD=2.07$).
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Figure 1. Awe video 1

Figure 2. Control video 1
ART, AWE, GRIEF, AND GIVING

Figure 3. Awe video 2

Figure 3. Control video 2
ART, AWE, GRIEF, AND GIVING

Figure 5. Awe video 3

Figure 6. Control video 3
ART, AWE, GRIEF, AND GIVING

Study 2

**Manipulation Check**

Our research yielded some interesting and somewhat unanticipated results. The manipulation checks showed that the experimental videos ($M=5.48; SD=1.50; p<.001$) elicited significantly more awe than the control videos ($M=4.37; SD=1.89$), confirming that we successfully created differing conditions. However, there were also significant differences between the experimental videos for Joy ($M=5.16; SD=1.60; p=.043$) and Pride ($M=4.52; SD=1.69; p=.004$) as compared to the control videos for Joy ($M=4.75; SD=1.67$) and Pride ($M=3.90; SD=3.80$). Our experimental videos elicited significantly more awe, joy, and pride than our control videos, but the joy and pride variables will be controlled for in later analyses to isolate the effects of awe.

**Altruism**

In addition, subjects in the experimental condition reported more feelings of “Smallness or Insignificance” ($M=3.30; SD=1.84; F (1, 262)=6.85; p=.009$) and “Presence of something greater than themselves” ($M=4.72; SD=1.81; p<.001$) as compared to the control condition Insignificance ($M=2.74; SD=1.61$) and Presence variables ($M=3.88; SD=1.98$). Prior research has shown that experiencing awe allows people to feel connected to something larger than themselves which in turn makes them feel small or insignificant (Piff et al., 2015). Our manipulation once again gathers support for its effectiveness.

Our results corroborate existing evidence that awe increases altruistic tendencies (Piff et al., 2015). We conducted mediation analyses using Hayes’ Process macro (Hayes, 2017). Participants in the awe condition indicated they would be significantly more likely to donate time and/or money to charity, but this effect was mediated by the aforementioned Presence variable had an indirect effect (.78, 95% CI = .34, 1.30). Condition alone had no significant effect on
likelihood to donate time or money to charity. This reinforces existing literature on awe, the small self, and prosocial behaviors.

**Figure 9.** Mediation effect of Presence variable on Donation. Indirect effect through Presence=.78, CI= .34, 1.28

**Buffering Loss**

We also looked at the negative feelings associated with losing a relationship, and we hypothesized that awe would buffer these effects. Unexpectedly, those in the awe condition actually reported increased levels of grief as compared to the control group when controlling for the pride and joy variables ($F(1, 261) =4.223; p=.041$).

Surprisingly, we discovered that this effect was highly gendered. There was a significant interaction between gender and condition ($F(1, 260) =4.364; p=.038$). We found that men experiencing awe were much more likely to express grief when asked to think about losing an important relationship as compared to their counterparts in the control group ($t=2.61; p=.008$). When looking at women in both groups, there were no significant effects of condition ($p=.710$). In the experimental group experiencing awe, there were no significant differences between grief expressed by men and women ($p=.440$). However, in the control group the men had significantly
lower reports of grief than women ($t=3.875; p=.0001$). Cases in which participants did not disclose their gender or identified as something other than male or female were excluded from analyses. This effect could be explained a number of ways, but we hypothesize that experiencing awe increases social connectedness for men which in turn increases grief when faced with the loss of a close social connection. This effect is shown in Figure 7.

![Effect of Condition on Grief broken down by gender (controlling for pride and joy)](image)

*Figure 7. Effect of Condition on Grief broken down by gender (controlling for pride and joy)*

There was also a slight effect for the nature of the relationship on the reported levels of grief. Familial relationships like parent to child or siblings tended to have significantly higher
levels of reported grief in the face of relationship loss as compared to friendship or romantic relationships \((p=.047)\). In addition, dispositional awe correlated with the relationship loss or grief outcome \((r=.174)\).

In addition to our variables of interest, we also found a marginal interaction effect of age on condition outcomes for grief \((p=.069)\). The pattern of results mirrors that of gender, where the awe condition showed little to no group differences, but the control had some differences in responses that correlated to age. The older the participant, the more grief the participant reported after watching control videos. On the other hand, if the participant was younger, he/she tended to report less grief after watching the control videos. Older participants reflected the same reporting patterns as men, but to a lesser degree. It should be noted that participants were asked to report their age as falling into one of nine different ordered age brackets rather than as a continuous variable.

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\(|r=\cdot471^{**}\)

| Pride (3)         |   |   |   |   |   |   |   |   |
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|                   |   |   |   |   |   |   |   |   |
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\(|r=\cdot838^{**}\)  \(r=\cdot687^{**}\)

| Presence (4)      |   |   |   |   |   |   |   |   |
|                   |   |   |   |   |   |   |   |   |
|                   |   |   |   |   |   |   |   |   |
|                   |   |   |   |   |   |   |   |   |

\(|r=\cdot358^{**}\)  \(r=\cdot606^{**}\)  \(r=\cdot619^{**}\)

| Grief (5)         |   |   |   |   |   |   |   |   |
|                   |   |   |   |   |   |   |   |   |
|                   |   |   |   |   |   |   |   |   |
|                   |   |   |   |   |   |   |   |   |

\(|r=\cdot174^{**}\)  \(r=\cdot102\)  \(r=\cdot092\)  \(r=\cdot080\)
Discussion

This study aimed to investigate the relationship between art, awe, charitable giving, and grief. Unlike any studies that have been done in the past, this study used videos of art creation to evoke awe in participants. Our first hypothesis was supported because in both studies participants in the experimental group experienced significantly more feelings of awe when watching the selected art creation videos as compared to the control group watching the corresponding control videos. Our second hypothesis was also supported because presence was a significant mediator between condition and charitable donations. Our third hypothesis set out to show that awe has a buffering effect on grief in the face of relationship loss, but our third hypothesis was not supported. In fact, we found the opposite effect—experiencing awe made participants report significantly more grief than those in the control group, and this effect was gendered.

Study 1 aimed to assess new methodology for evoking awe in a laboratory setting. It provided theoretical and practical implications for psychological science. Prior research has shown that awe can be experimentally manipulated by watching videos of sweeping landscapes of nature (Koh et al., 2017). We set out to show that awe could also be manipulated by watching videos of art creation. According to a study done by Dacher Keltner and Jonathon Haidt (2003),

**Figure 8. Correlations between different variables of interest.**

** p <.01
extraordinary human skill can be an awe elicitor. Our methodology was novel and effective as seen in our results from both our pilot study and our main study. We got significant results for five of the six original videos, and our awe check in Study 2 also showed that participants experienced significantly more awe in the experimental condition as compared to the control condition.

Study 2 looked to replicate existing effects of awe in a different domain—art. Previous studies have shown that awe can evoke feelings of smallness and the presence of something greater than yourself. These feelings in turn can create increases in charitable giving (Piff et al., 2017). Our study asked participants to indicate whether or not they were feeling either of these things, and we assessed if there was a mediating effect on their willingness to donate time or money to charity. We found that experiencing awe had a significant effect on whether or not participants felt a sense of small-self or presence of something greater than themselves. However, small-self was not a significant mediator of charitable donation, and presence was. This pattern of results is familiar, and we reinforced the idea that awe can have positive outcomes for wellbeing.

We set out to see if awe would have a buffering effect on grief from relationship loss. Previous literature has showed that awe can buffer loss of a material item, and we hoped to extend that literature and see broader applications of grief in therapeutic settings (Koh et al., 2017). However, we found a pattern of results that directly conflicted with our original hypothesis. Awe actually amplified the reports of grief, rather than diminished them. There seems to be an important difference between loss when it comes to a person as compared to loss when it comes to a physical or material item. This difference may seem intuitive, but this study shows that there may be an important difference in the way the brain processes these two different types of loss. Our findings are consistent with the findings of Koh et al. (2017) because
they hypothesized that awe would focus the participants on greater connectedness rather than material attachment. Our study encouraged participants to focus on their strongest human connection, so it would make sense that experiencing awe exacerbated their grief when faced with this relationship loss. In addition, our pattern of results gives insight into the way the emotion awe works on the brain. It has a limited scope and threshold of when there are positive effects and negative effects, and this study contributes to exploring and defining such boundaries.

Although there was an overall significant effect of condition on grief reports, once we analyzed the results in terms of gender, we found a significant interaction. The men in the awe condition reported comparable amounts of grief to the women in both conditions. However, the men in the control condition reported significantly less grief than any other group. There seems to be an important difference between men and women’s reports of grief, and this study shows that awe has the power to influence them. There were no significant differences between the groups of women across conditions. The intervention seemed only affect men, and it brought men’s levels of grief to the same level as women’s.

In hindsight, this result makes sense because of the bidirectional power of awe. There is research that shows that although awe is generally a positive emotion, there are also cases where it can evoke a sense of threat-detection, which leads to fear. If the awe from these videos created fear in participants, the typical emotional responses include increased anxiety and feelings of powerlessness (Gordon et al., 2017). These feelings could increase reports of grief in participants when faced with the thought of losing the person that they treasure the most in their lives. However, this effect seemed to not be additive for women in the control condition.

A possible explanation for the gendered effect that we discovered is the different inclinations of social reporting for different genders. Men might feel more pressure to report less
grief. This could be for many reasons including patterns of media portrayals of men. A future study could attempt to find a way to reduce social pressures of reporting emotion. If the pattern of results that we found reflects the social reports rather than the actual experiences of our participants, awe might be a way to do such a thing. If men in the awe condition feel like they can more openly express their true feelings, this could have positive effects on their psychological wellbeing. If men can express equal levels of grief as women can, they can more easily undergo therapy for grief. If they feel less shame about expressing their feelings and connecting with a therapist, the treatments they undergo will be more successful and they can cope with loss in a more effective way (Cochran & Rabinowitz, 1996)

There are many limitations that may have affected our results. First of all, there may have been some technical discrepancies with the experimental design. Participants clicked on a link to complete and anonymous survey from their personal device, so there was no way to standardize the experiment experience. Some participants did not watch the videos through to their completion, which could have skewed the data. In addition, participants may have had different experiences with video quality and sound. Although we limited our sample to people within the United States, there may have been participants who did not speak English as their first language. We excluded cases from the study that entered illogical text into the response boxes, but people could have misunderstood the instructions, questions, and video content if they were not fluent English speakers. Lastly, we were limited by our experimental design in priming participants to think deeply about their relationships. A few sentences in a paragraph might not have been enough to get them in the right state of mind and emotion for if they were to truly experience that loss. In future studies, participants could be in the lab for a more controlled procedure, and they could use other forms of media or virtual reality to truly picture their loved one and prime a sense of grief.
ART, AWE, GRIEF, AND GIVING

There are many aspects of this study that could be further investigated in the future. One of the most pressing matters would be to investigate the difference between actual experience of grief and simply social reporting of grief. Currently, there are no exact measures to know when or how someone is feeling an emotion other than self-report. An interesting direction of research could use fMRI to see if there are any correlations between brain activation and reports of grief. This way, scientists could measure brain activity after exposing participants to the different conditions. We could understand if the gendered pattern we observed was an actual difference in brain activation, or rather if participants just reported different levels of the same activation patterns.

Another important factor to investigate would be if there are negative emotions that would be less associated with one gender. If women naturally report more grief, there is a possibility that men are less inclined to feel it. Further studies should look at the differences between men and women and the emotions that both genders feel. This will have implications for the way we treat mental health disorders revolving around grief.

In addition, there were marginal effects of age on the way that people experience awe and report grief. Older populations seemed to report more grief especially in the control condition, and experiencing awe brought younger people to similar levels of reporting. If it turns out that experiencing and reporting grief is a valuable and healthy part of the healing process in response to loss, this could be a targeted therapy technique. It’s important to know that older adults report more baseline levels of grief because this can also play a role in the way aging care approaches loss in a clinical setting.

One way we could get a more specific look at the way people are experiencing their emotions is to administer this study in a lab setting and have people verbally explain their thought processes as they are happening. Their responses can be recorded and coded by
psychologists retroactively to look for patterns that might differ between genders or that could reveal trends or mechanisms about how awe works. This would give us a more holistic picture of the way that people are coming to the conclusions that they reported in the original study.

This study has some important implications and applications to common problems that people face. First of all, our study replicated the pattern of charitable giving that past research has shown awe to create (Piff et al., 2017). This can be applied practically to fundraising efforts for organizations. Awe has an indirect effect on altruism that is mediated by feeling connected to a presence greater than oneself. We also used art to evoke awe and asked people if they would donate time or money to charity that supports the arts. Some future research could look into whether this effect was strengthened by the intersection of subject matter and charity type. People might be more likely to donate time or money to a specific charity based on the subject matter of the videos they are watching, or this might just be a coincidence. If people were made to watch videos that evoke awe during fundraisers, they should be more likely to donate time or money to the charity being benefitted.

As mentioned throughout this article, there are also many applications of this study in a therapy setting. We have further examined the role that awe can play in buffering negative emotions, and we have made a distinction between feelings of loss when considering a material item versus feelings of loss when considering a person or relationship. These emotional processes are different from each other, and awe works to buffer material loss but amplify grief reports from relationship loss. These are important things to keep in mind if awe-therapy intervention is being used. Awe is a bidirectional emotion that has the power to create a sort of connectedness elevation, but it also can instill fear, dread, and panic in people who experience it.

There is evidence that emotional expression is essential to processing and coping with relationship loss and grief. Especially men raised in Western cultures suffer from repression of
their emotions, so an intervention that allows them to express grief more freely can help them achieve higher levels of wellbeing (Clayton, 2015). When men suppress negative feelings like yearning or sadness, they do are not able to seek out comfort to help them recover and adapt their behavior to overcome such feelings. Men, more so than women, are taught to hide emotions that incite vulnerability, but our awe-centered intervention seems to negate this trend. Men in the awe condition reported levels of grief equivalent to those of women and significantly higher than their counterparts in the control condition. Our intervention can be used to help men express more emotion and in turn allow for healing from the intense pain that results from the loss of an important relationship.

We also showed that awe could be evoked through watching the process of creating art. Given the many benefits that experiencing awe can have on people, this domain is important to keep in mind. Our study supports the idea that arts play an important role in a healthy lifestyle. Specifically, we show that the art creation process is important to experiencing awe and its benefits. More research should look into which aspects of the videos are most vital to creating the awe sensation and whether or not this study could be replicated by looking at still art.

This study lends support to incorporating more opportunities to create art on a routine basis because it can increase levels of dispositional awe. Dispositional awe was a strong correlate for our outcomes, and increasing the amount of creativity in someone’s life might also be able to increase their levels of wellbeing. Children in schools should be given the opportunity to take art classes at a young age so they can begin to weave creativity into their routines. This study can be used to foster support for school funds to be allocated towards art programs.
ART, AWE, GRIEF, AND GIVING

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http://dx.doi.org/10.1037/pspi0000018
ART, AWE, GRIEF, AND GIVING


Appendix A. Qualtrics Survey

Consent form

Research
This project is intended for practical research, and for that reason is restricted to adults aged 18 years and over.

Project Description
Participate in a study where you answer questions about your emotional reactions and attitudes towards art that you view. The study will consist of watching videos answering questionnaires and surveys. The session should last no more than 15 minutes.

Benefits and Risks of Research
1. Amazon Mechanical Turk: The direct benefits of this study include monetary compensation, in the form of 75-Cents, and cognitive stimulation resulting from completion of the study, as well as a sense of worth for contributing to science through participation.
2. The studies will pose minimal risk to participants. Participants may feel a sense of mild anxiety, discomfort, or distress as they describe their mental wellbeing.

Principal Investigator
The principal investigators are Jamie Katz and Dr. Hoyt. Should you have any questions or concerns, you can contact Jamie Katz at Jamie.Katz@richmond.edu or (301)-795-5676 or Dr. Hoyt at choyt@richmond.edu or (804) 287-6825.

Voluntary Participation
Your participation in this project is voluntary and you are free to skip specific questions or withdraw your consent and discontinue participation in the project at any time without penalty.

Confidentiality of Records and Use of Information and Data Collected
Your individual results will remain confidential. We will not be collecting any identifiable information. All efforts will be made to minimize the possibility that anyone would be able to associate your data or the results of the study with your identity. What we find from this study may be presented at meetings or published in papers, but identifying information about you will not ever be used in these presentations or papers. Information collected in this study will be used in aggregate form only. If you would like to receive the results of this study after it has been completed, please contact the principal researcher (contact information provided above).

Payment Information
MTURK: You will be compensated for your participation in this study with a payment of 75 cents.

Participant’s Rights Information
If you have any questions concerning your rights as a research participant, please contact the Chair of the University of Richmond’s Institutional Review Board (URIRB) for the Protection of Human Subjects of Research.

Participant’s Consent
The study has been described to me and I understand that my participation is voluntary and that I am free to withdraw my consent and discontinue my participation in the project at any time without penalty.

I understand that if I have any questions or concerns about this experiment, I may pose them to Dr. Crystal Hoyt, choyt@richmond.edu.

By clicking the box below, I attest that I am 18 years of age or older, that I have read and understand the above information and that I consent to participate in this study.

Perceived Stress Questions

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don’t try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.
ART, AWE, GRIEF, AND GIVING

In the last month, how often have you felt that you were unable to control the important things in your life?

- Never
- Almost Never
- Sometimes
- Fairly Often
- Very Often

In the last month, how often have you been upset because of something that happened unexpectedly?

- Never
- Almost Never
- Sometimes
- Fairly Often
- Very Often

In the last month, how often have you felt nervous and “stressed”?

- Never
- Almost Never
- Sometimes
- Fairly Often
- Very Often

In the last month, how often have you dealt successfully with irritating life hassles?

- Never
- Almost Never
- Sometimes
- Fairly Often
- Very Often

In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?

- Never
- Almost Never
- Sometimes
- Fairly Often
- Very Often

In the last month, how often have you felt confident about your ability to handle your personal problems?

- Never
- Almost Never
- Sometimes
- Fairly Often
- Very Often

In the last month, how often have you felt that things were going your way?

- Never
- Almost Never
- Sometimes
- Fairly Often
- Very Often

In the last month, how often have you found that you could not cope with all the things that you had to do?

- Never
- Almost Never
- Sometimes
- Fairly Often
- Very Often
ART, AWE, GRIEF, AND GIVING

In the last month, how often have you been able to control irritations in your life?
Never        Almost Never       Sometimes       Fairly Often       Very Often

In the last month, how often have you felt that you were on top of things?
Never        Almost Never       Sometimes       Fairly Often       Very Often

In the last month, how often have you been angered because of things that happened that were outside of your control?
Never        Almost Never       Sometimes       Fairly Often       Very Often

In the last month, how often have you found yourself thinking about things that you have to accomplish?
Never        Almost Never       Sometimes       Fairly Often       Very Often

In the last month, how often have you been able to control the way you spend your time?
Never        Almost Never       Sometimes       Fairly Often       Very Often

In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?
Never        Almost Never       Sometimes       Fairly Often       Very Often

Psychological Wellbeing Measures

Indicate how much you agree with the following statements

I like most parts of my personality
Strongly Disagree       Disagree       Somewhat Disagree    Neither Agree nor Disagree       Somewhat Agree       Agree       Strongly Agree
ART, AWE, GRIEF, AND GIVING

Maintaining close relationships has been difficult and frustrating for me

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

For me, life has been a continual process of learning, changing, and growth

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

I sometimes feel as if I've done all there is to do in life

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

I am good at managing the responsibilities of daily life

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

I tend to be influenced by people with strong opinions

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

**Dispositional Awe Questions**

Indicate to what extent you agree with the following statements

I often feel awe

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

I see beauty all around me

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
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</thead>
</table>
ART, AWE, GRIEF, AND GIVING

I feel wonder almost every day

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
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I often look for patterns in the objects around me

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

I have many opportunities to see the beauty of nature

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
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</table>

I seek out experiences that challenge my understanding of the world

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

Relationships

Think about a personal relationship that you cherish. It does not have to necessarily be someone that you are related to; it just must be someone important to you that you love. Describe this relationship in adequate detail, such that another person would be able to imagine it. Your response should be at least 4 sentences. How often do you interact? What are these interactions like? What kind of support or comfort do you find in this person? What is their relation to you? How did you meet? Etc.

Video manipulation
The next few screens will prompt you to watch **three short videos** of different works of art and report your responses in reaction to watching them. Do not go on to the next screen until you have watched the **entire** video. There is no way to go back after clicking the next arrow. Some videos have a sound component and some do not.

### Positive Emotions and Small Self

Report the extent to which you are currently feeling the following

<table>
<thead>
<tr>
<th>Awe</th>
<th>1- Not at all</th>
<th>2</th>
<th>3</th>
<th>4- Neutral</th>
<th>5</th>
<th>6</th>
<th>7- Extremely</th>
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<th>Contentment</th>
<th>1- Not at all</th>
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<th>3</th>
<th>4- Neutral</th>
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<th>7- Extremely</th>
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<th>Gratitude</th>
<th>1- Not at all</th>
<th>2</th>
<th>3</th>
<th>4- Neutral</th>
<th>5</th>
<th>6</th>
<th>7- Extremely</th>
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</table>
ART, AWE, GRIEF, AND GIVING

<table>
<thead>
<tr>
<th>Emotion</th>
<th>Scale 1</th>
<th>2</th>
<th>3</th>
<th>4- Neutral</th>
<th>5</th>
<th>6</th>
<th>7- Extremely</th>
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<tr>
<td>Joy</td>
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<td>Pride</td>
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<td>Amusement</td>
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<td>The presence of something greater than myself</td>
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<td>Small or insignificant</td>
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rel questions

Now think back to the question where we asked you to describe a relationship. Imagine you have lost the person that you had described. The person could have died, become extremely incapacitated, or stopped communicating with you. Indicate on a scale 1-7 the extent to which you would feel the following emotions if you really did lose this person at this point in time.

<table>
<thead>
<tr>
<th>Emotion</th>
<th>Scale 1</th>
<th>2</th>
<th>3</th>
<th>4- Neutral</th>
<th>5</th>
<th>6</th>
<th>7- Extremely</th>
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<tbody>
<tr>
<td>Unhappy</td>
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<tr>
<td>Upset</td>
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</table>
ART, AWE, GRIEF, AND GIVING

Regretful
1- Not at all 2 3 4- Neutral 5 6 7- Extremely

Panic
1- Not at all 2 3 4- Neutral 5 6 7- Extremely

Yearning
1- Not at all 2 3 4- Neutral 5 6 7- Extremely

Prosocial Behavior Outcomes

How likely would you be to donate time to a charity that promotes the arts?
1- Very Unlikely 2 3 4- Neutral 5 6 7- Very Likely

How likely would you be to donate money to a charity that promotes the arts?
1- Very Unlikely 2 3 4- Neutral 5 6 7- Very Likely

If you answered "likely" to the last question, how much would you be willing to donate?
○ N/A
○ $1-$5
○ $5-$10
○ $10-$15
○ $15-$20
○ $20-$25
○ $25+

Moderators

How often do you engage in creative processes like painting, drawing, or sculpting?
Less than once a year Once every few months Once a month Once a week Every day

○ ○ ○ ○ ○
How many significant losses (e.g. family member, close friend, relationship, etc.) have you faced during your life?

How recently have you experienced such a loss?

- **Within the last week**
- **Within the last month**
- **Within the last few months**
- **Within the last year**
- **More than a year ago**
- **Within the last few years**
- **More than 5 years ago**

Indicate how much you agree with the following statement:
My faith in a higher power/universal intelligence helps me cope during challenges in my life

- **Strongly disagree**
- **Disagree**
- **Somewhat disagree**
- **Neither agree nor disagree**
- **Somewhat agree**
- **Agree**
- **Strongly agree**

**Demographics**

Have you ever been diagnosed with a psychological disorder?

- **Definitely yes**
- **Probably yes**
- **Might or might not**
- **Probably not**
- **Definitely not**

What is your race/ethnicity

- **White**
- **Hispanic/Latino**
- **African American**
- **Asian**
- **Pacific Islander/Native American**
- **Other**

How old are you?

- **Under 18**
- **18 - 24**
ART, AWE, GRIEF, AND GIVING

- 25 - 34
- 35 - 44
- 45 - 54
- 55 - 64
- 65 - 74
- 75 - 84
- 85 or older

What is your gender?
- Male
- Female
- Other

Debrief

Thank you for participating in our study.

This study was looking at the effect that awe can have on buffering the negative feelings associated with loss and more specifically with the loss of an important relationship. The questions were meant to get at your emotion after imagining the important person described in your life disappeared. The videos you watched were either awe-evoking or control videos with similar subject matter but different extents of awe.