

Slow Down, You're Doing Fine: Examining the Relationships Between Awe, Expanded Time Perception, and Life History Strategy

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Introduction

Awe is often considered a positive emotion due to its well-documented enhancements of prosocial behavior, cognition, and well-being. This two-part study fills an important gap in the literature on the self-transcendent emotion awe: Awe's relationship to behavioral ecology and the mechanisms of awe and time expansion.

Awe is thought to expand one's perception of time by shifting attentional resources away from the self and toward an awe-inducing stimulus, resulting in feelings of self-smallness and connectedness

In Part One, the dispositional components of the awe experience are examined. As life history ecology has often been implicated in perceptual alterations of time, we examine its relationship to dispositional awe. Time perspective as a mediator of dispositional awe's well-documented outcomes, such as life satisfaction and subjective wellbeing, is also examined.

In Part Two, awe is experimentally induced with virtual reality (VR) technology to examine its impact on retrospective perceptions of time and well-being.

Predictions

Part One:

1. Slower life history strategies will positively predict greater levels of dispositional awe. **2.** A relatively slow life history strategy, as mediated by higher levels of dispositional awe, will positively predict greater well-being. **3.** Greater levels of dispositional awe will positively predict greater life satisfaction and well-being, as mediated by perceptions of time as more available or expanded.

Part Two:

1. Individuals exposed to an awe-inducing stimulus will experience time as expanded post-intervention. **2.** Individuals exposed to an awe-inducing stimulus will report greater well-being after the intervention. **3.** Individuals with relatively slow life history strategies will report the awe stimulus as generally more awe-inducing, appraising the time of the intervention as longer.

Materials and Methods

Part One:

Participants: ($N=196$; mean age =26.28, $SD =13.77$)

Measures and tasks presented via a Qualtrics Survey:

- Dispositional Positive Emotions Scale (DPES) (Shiota et al., 2006)
- High-K Strategy Scale (Giosan, 2006)
- The Satisfaction With Life Scale (Diener et al., 1985)
- Self-Rating Depression Scale (Zung, 1965)
- Time expansion belief items (Rudd et al., 2012)
- Time reproduction task

Part Two:

Participants: ($N=37$; mean age =22.27, $SD =7.67$)

Measures and tasks presented via Qualtrics Survey:

- Measures from Part One
- Awe Experience Scale (AWE-S) (Yaden et al., 2020)
- Time estimation task

Materials:

- Meta Quest 3 Advanced All-in-One VR Headset

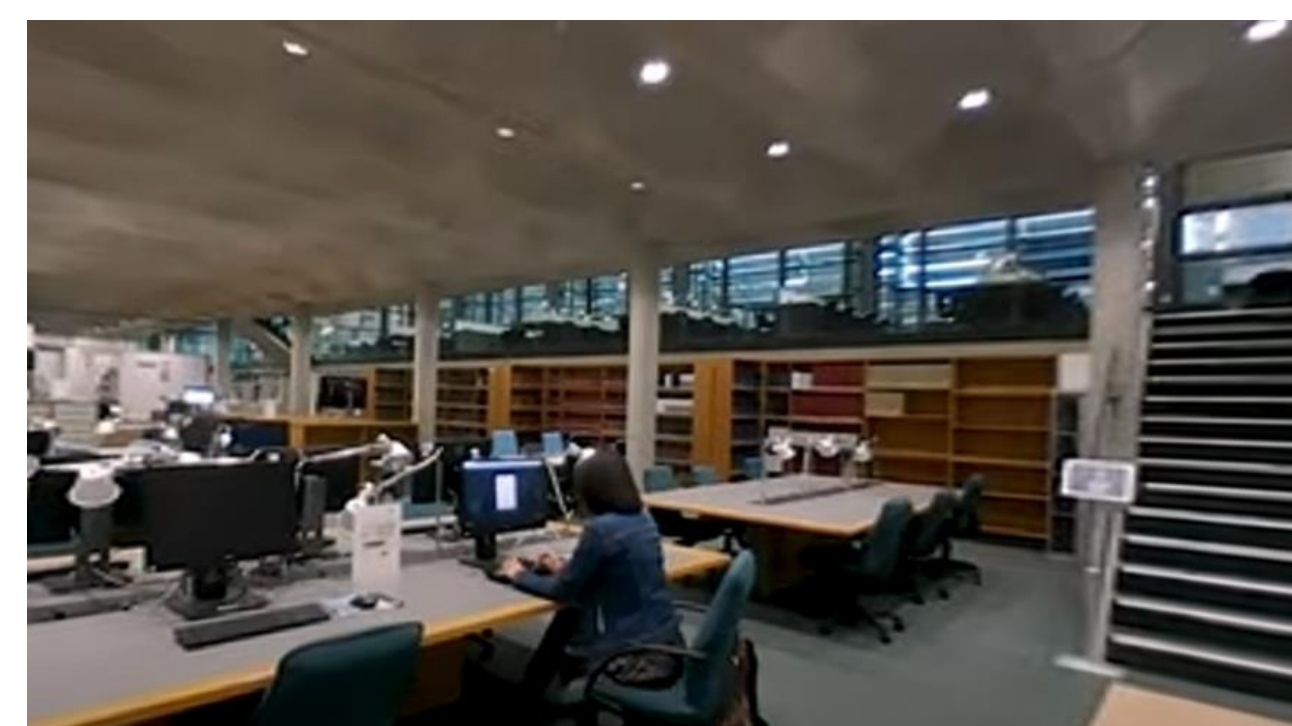
Intervention:

360° virtual environment for 3 minutes and 19 seconds

- 2 conditions:

Condition 1:

Neutral stimulus;
Library ($N=18$)



Condition 2:

Experimental,
awe-inducing
condition;
Overview effect
($N=19$)



Results and Discussion: Study Part One

Correlations with dispositional awe:

- High K (i.e., slow life history strategy) ($r = .36^*$)
- Beliefs in time as expanded ($r = .22^{**}$)
- Life satisfaction ($r = .38^{**}$)
- Depression ($r = -.25^{**}$)

Regression analyses:

- Dispositional awe is a significant predictor of life satisfaction and well-being when holding demographics constant, but it loses predictive power when accounting for the other 6 positive emotions.
- Dispositional awe is a significant predictor of time expansion beliefs even when holding demographics constant.

Bottom line:

Possible associations between stable behavioral ecologies, appraisals of time as expanded, and the individual tendency to experience awe.

Implications for dispositional awe enhancing life satisfaction and well-being.

Results and Discussion: Study Part Two

Independent samples t-test:

Individuals in Condition 2, exposed to the awe-inducing stimulus ($M=127.38$, $SD=35$), reported experiencing significantly greater amounts of awe than those in Condition 1 who were exposed to the neutral stimulus ($M=103.83$, $SD=29.26$), $t(35) = -2.21$, $p = .017$.

Bottom line:

Condition 2 was significantly more awe-inducing than Condition 1 in terms of the six factors of the AWE-S (vastness, accommodation processes, connectedness, self-loss, physiological symptoms, and time expansion).

These data demonstrate the potential value of using VR to enhance the ecological validity of inducing emotion states in a controlled laboratory setting.

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