

Awe and Critical Thinking

Research and Evaluation Executive Summary

Goal

The goal of this study was to measure how emotions related to feelings of “awe” change within the Museum and how they may be related to critical thinking.

Why

Studies have suggested that awe-related emotions could positively impact critical thinking skills. But those studies were done in lab environments and did not look at how it may be happening.

What

Guests were given surveys, texted on their cell phones and used eye-tracking glasses to measure awe and critical thinking during their visit. A subset was also interviewed at the Museum. We also collected surveys at the entrance of an art museum in downtown Chicago.

Who

- 1,115 guests took surveys about awe and critical thinking
- 180 guests were sent text messages about awe during their visit
- 51 guests were interviewed about awe experiences in life and within the Museum
- 31 guests wore eye tracking glasses as they walked through key spaces

How

- Surveys were given at MSI in these locations: as guests entered the Museum from the parking garage, in the Entry Hall (entering and leaving), in the Rotunda (after they ascended the stairs), in the U-505 exhibit (at the bottom of the ramp), and outside the front of the ground floor entry kiosks.
- Surveys were also given outside the Museum of Contemporary Art (at the top of the entrance steps).
- Cell phone texts were sent to guests about once an hour during their visit.
- Interviews were conducted near the *Great Train Story*.
- Eye tracking was recorded in the Rotunda, U-505 exhibit and as guests approached the Museum from the #6 CTA bus stop.
- Critical thinking was measured by asking guests to describe science-themed imagery they were shown and analyzing complexity of the responses.

When

Data was collected during various phases from June 2017 – March 2018.

What

Major findings include:

- Different spaces inspire different types of awe, with the biggest differences being between indoor spaces and outdoor spaces.

- We found no major relationships between awe and critical thinking.
- We did find a consistent relationship between feelings of awe and skeptical thinking. Those who reported higher levels of awe also reported being more skeptical about arguments they read and more interested in learning.
- Awe diminishes during the visit, but very slightly.
- Guests who report more prior knowledge about an exhibit (ex: U-505) showed higher levels of awe, suggesting appreciation leads to awe.
- When guests look upwards at the top of MSI's building, they tend to report higher levels of awe related to feeling "liberated" and "free."
- Guests spent about 64 percent of their time reading signs in the U-505 exhibit and 36 percent looking at the submarine.
- Guests entering the Museum from the outdoor entrances reported less negative awe (ex: feeling oppressed, confused, small) than those entering through the garage.

- Interviews suggest guest experiences of awe within the museum bring out more discussion about others than remembered experiences outside of the museum, which are more focused on themselves.

For More Information

This study was presented at the 2018 American Alliance of Museums conference and the International Conference of the Learning Sciences in June 2018. An academic manuscript was posted to the PsyArXiv free repository at: <https://psyarxiv.com/bwh3n/>

A follow-up study about awe and long-term learning at museums was conducted in 2018-2019.

Project Lead: A. Price

Executive Summary Prepared By: A. Price
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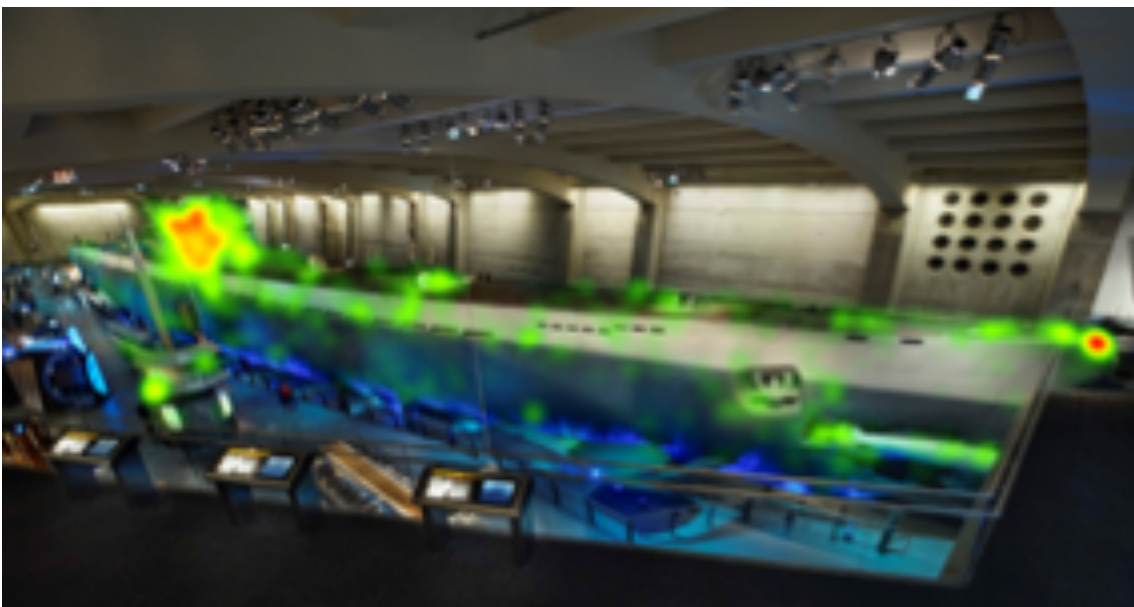


Fig. 1. Heat map of guests' gazes while walking around the U-505 submarine.