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WHERE “WOW” MEETS “HOW”: A NEW STUDY OF AWE AND LEARNING FROM MUSEUM EXPERIENCES

CHICAGO (May 26, 2021) – Step inside a 40-foot tornado. Board the actual U-505 submarine that was blown to the surface and captured by Allied forces. Relive the thrills of Michael Jordan’s final NBA season. Each experience inside a museum or science center can inspire awe, a complex emotion that evokes fear, veneration and/or wonder—sometimes all at the same time. But what do we really know about where and how awe occurs?

A new research study sheds light on awe and what we can learn from it, drawing on surveys of visitors to the Museum of Science and Industry, Chicago (MSI) and seven other science centers, art museums and cultural institutions located in Chicago, Denver and Minneapolis.

The [study](#), published in the April issue of the professional journal *Visitor Studies*, explores how the level of awe guests experience ranges among different museum types and sizes, how long these feelings and memories of awe last, and whether there are differences in the experience across demographic and behavioral variables. While invoking awe is a goal for most institutions and programs, the topic has received relatively limited scholarly attention in cultural settings. (Full paper available on request.)

“Research projects like this, that help us better understand how visitors experience our exhibits, are critical to our ability to be responsive and relevant to the communities we serve,” said Chevy Humphrey, president and CEO of the Museum of Science and Industry, Chicago.

MSI surveyed 899 guests at the conclusion of their visit and 550 of them again about a week later. The study revealed several key insights that can inform exhibition development and design.

“We know that visitors come to museums to see new things and expand their learning,” said Aaron Price, director of research and evaluation at MSI. “The more we learn about how people respond to and learn from our exhibits, the more we can design experiences that create the most impact and engagement for them.”

Researchers expected to see highly varied levels of awe among different types of institutions, given the distinct nature of both their content and how it is presented (e.g. science museums tend to have more multisensory and energetic exhibition spaces, while zoos and aquariums offer significant outdoor components and connection with live animals). But this turned out not to be the case: across all the institutions, guests reported a consistent level of awe as they departed.

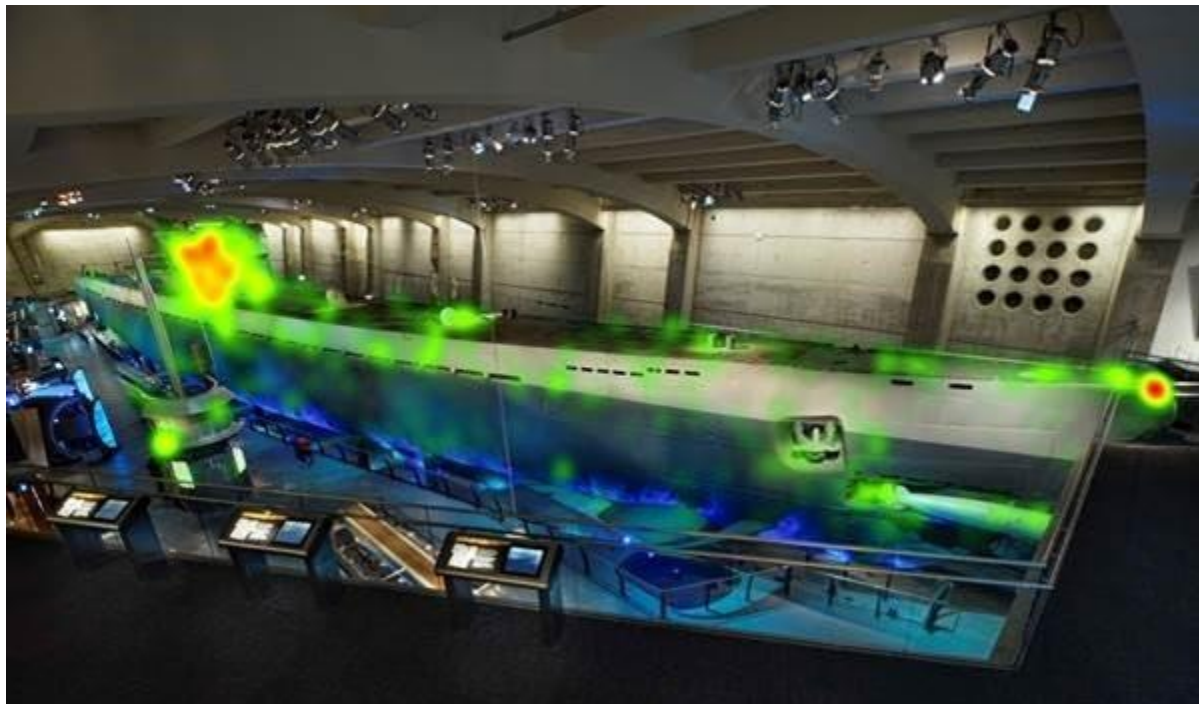
The only difference researchers identified across museum types was the amount of awe related to feeling small (diminished self) was higher among science museum visitors than at other participating institutions. Additionally, the experience of feeling small in a vast world had the greatest connection to learning, as guests who reported feeling small were more likely to discuss their social interactions and the implications of what they learned, and how what they learned related to their values and understanding.

The study also found that the more an individual already knew about a particular topic, the more they experienced awe, upending the notion that awe requires the element of surprise. This finding also suggested that elements that evoke awe in the visitor experience should “not be limited to only large, over-the-top exhibit spaces” or only at the entrance of one particular location of an exhibit, but instead embedded throughout the space.

In addition to the guest survey, researchers Dr. Kimberly Quinn at DePaul University and Dr. Sheila Krogh-Jespersen at Northwestern’s Feinberg School of Medicine worked with MSI to capture eye-tracking data to analyze where visitors focused their attention. They found that the amount and type of awe guests felt varied based on where they looked within a space.

“We learned that where guests look can impact the amount and type of awe they feel,” said Dr. Krogh-Jespersen, associate director for developmental sciences integration at the Feinberg School of Medicine. “Guests feel more emotion when they focus on what is in front of them, rather than being distracted by what is coming next.”

“These findings provide helpful nuggets for museum planning,” said Price of MSI. “Museum leaders should not fall into the trap of studying or creating a singular ‘awe moment’ that builds on surprise, but rather look for multiple opportunities to spark wonder and engagement over the course of the visitor experience.”



Caption: The U-505 exhibit at MSI. Overlaid is a map of where guests focused their attention in the exhibit, as measured with eye-tracking glasses. Researchers found that where guests looked in an exhibit such as this impacted how much awe they felt, and also what types of awe (ex: positive awe associated with feeling free or negative awe associated with feeling overwhelmed). Full paper is [here](#). Photo by J.B. Spector / MSI.

The Museum of Science and Industry, Chicago (MSI), one of the largest science museums in the world, offers world-class and uniquely interactive experiences that inspire inventive genius and foster curiosity. From groundbreaking and award-winning exhibits that can't be found anywhere else, to hands-on opportunities that make you the scientist—a visit to MSI is where fun and learning mix. Through its Welcome to Science Initiative, the Museum offers a variety of student, teacher and family programs that make a difference in communities and contribute to MSI's larger vision: to inspire and motivate children to achieve their full potential in science, technology, medicine and engineering. The Museum is grateful for the support of its donors and guests who make its work possible. MSI is also supported in part by the people of Chicago through the Chicago Park District. For more information, visit msichicago.org or call (773) 684-1414.

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