

Museum of Memory: An Analysis of How Museum Circulation Can Help Visitors Remember a Space.

ALVARO ALVAREZ Cornell University, aaa248@cornell.edu San Diego, 92173, United States

This paper addresses perception in the museum setting; I analyzed three exhibition spaces in Europe and identified how the senses and hippocampus play a role in remembering the galleries visited. The purpose of this paper is to help fellow design students understand that user perception, memory, and space circulation is directly associated with neuroscience and should be strongly considered when designing, not just museums, but any space.

1. ABSTRACT

1.1. MUSEUM ACTIVITY, THE SENSES, AND NAVIGATION

A museum's four layers of activities:

- 1. Observation (a sign of curiosity)
- 2. Movement (multi-tasking walking + seeing)
- 3. Setting (we move in relationship to the artworks and walls surrounding us)
- 4. Art Encounter (emotional response)

An efficient learning strategy in a museum is through the design of their different circulation systems. Beyond the individual galleries in a museum, it is how we move from an understanding of place to an understanding of architectural space that helps us remember it.

Traditional sense of touch, smell, hearing, and even taste, all parallel sight and happen simultaneously as we navigate a museum. Our ability to understand where we are in space is dependent on the details of sensory cues received, such as art pieces or wall surfaces.

During navigation, our brain is influenced by our movement and by environmental stimulation, which allow us to create different types of mental maps that then contribute to the formation of memories. As we move through an environment, our brain fires populations of hippocampal cells when we reach specific locations. These are called place cells.

1.2. CASE STUDY: MERCEDES-BENZ MUSEUM (STUTTGART, GERMANY. UNSTUDIO 2006)

Prescribed circulation allows for guests to learn content of museum in chronological order as they circulate.

UNStudio, it seems, wanted to impose a map of their own on our brain; they provided us with different standpoints and multiple perspectives. The automobiles were our distal stimuli; our landmarks as we navigated.

1.3. Case Study: Beyeler Foundation (Riehen, Switzerland. Renzo Piano 1997)

This museum's four facades are our brain's environmental cues. If the visitors do not know their location in the building, they can walk towards a side of the building, re-start their journey and venture again through the partitions. Researcher Robert Muller said "there may be some tendency for fields to be more common near walls. There also seems to be a tendency for fields to occur in front of prominent stimuli on the apparatus wall."

1.4. Case Study: Jewish Museum (Berlin, Germany. Daniel Libeskind 1999)

The museum's ground level is its best performing component, as it explicitly and clearly addresses directionality and turns, complemented by strong rewards at the end of the hallways. However, once upstairs, visitors have to often re-orient themselves and become too distracted to even appreciate the information being exhibited. Libeskind carried on the question of art and addressed his project as a (beautiful) sculpture itself, which became overwhelming the second the actual artwork was brought in to occupy the space.

1.5. MUSEUM CURATORS, USERS, AND DESIGNERS

Whether the building is controlling us, or the user deciding, the architecture should engage our entire sense of self when we occupy it. Environmental stimulation is what invites us to act – primarily responsible for our awareness of a space. Museum directors and curators must allow for more dynamic interactions and

interrelations of ourselves and their art pieces as we circulate inside exhibition spaces and galleries. Users of a space, when encountering a new environment, will let their emotions react to what the architects and curators have created for them. Designers must offer projects with psychologically interesting ideas of circulation and how the body can react to perceived stimulation.

FIGURES/ILLUSTRATIONS/IMAGES







Top: Mercedes-Benz Museum, Stuttgart, Germany. By UNStudio. Section (left). Interior vertical circulation (right). Bottom: Beyeler Fondation, Riehen – Basel, Switzerland. By

Renzo Piano. Exterior (left). Ground plan (right).

ACKNOWLEDGMENTS

Prof. Werner H. Goehner (Cornell University's Department of Architecture). Prof. Caroline A. O'Donnell (Cornell University's Department of Architecture). Prof. David M. Smith (Cornell University's Department of Psychology). Edith Fikes (Cornell University's Department of Architecture). Jacob A. Lifton (Cornell University Class of 2014). Justin Wadge (Cornell University Class of 2015). Benjamin Hoffman (Cornell University Class of 2015). Dr. Michael A. Arbib (University of Southern California). Liliana Bustamante & Manuel Alvarez (my parents).

2. REFERENCES

- Bos, Caroline and Ben van Berkel. (2006). UNSTUDIO HG Merz. BUY ME A MERCEDES-BENZ. THE BOOK OF THE MUSEUM. Barcelona: Alcar. Print.
- Karp, Ivan and Steven Lavine. (1991). Exhibiting Cultures: The Poetics and Politics of Museum Display. Washington: Smithsonian Institution Press. Chapter 1. Print.

Muller, Robert. (1996). A quarter of a Century of Place Cells. Neuron: 1-10. Print.

Pallasmaa, Juhani. (2011). The Embodied Image. Chichester: John Wiley & Sons LTD. Print.

Pallasmaa, Juhani. (2012). The Eyes of The Skin. Chichester: John Wiley & Sons LTD. Print.

Piano, Lia and Renzo Pieano. (2008). Beyeler. Fondation Beyeler. Fondazione Renzo Piano. Print.

Shapiro, Matthew. (2001). Plasticity, Hippocampal Place Cells, and Cognitive Maps. Basic Science Seminars in Neurology, 1-8. Print.

Shapiro, Matthew L. and Heikki Tanila. (1997). Cues that Hippocampal Place Cells Encode: Dynamic and Hierarchical Representation of Local and Distal Stimuli. HIPPOCAMPUS, 1-19. Print.

3. AUTHOR BIO

Originally from the San Diego-Tijuana area, I finished high school in Hemet, CA. I currently study undergraduate architecture at Cornell University, Class of 2015. Along with an architecture professor, and ten other architecture students, I drove through Western Europe analyzing museums in nine different countries – this took place during the summer of 2013 and the trip lasted two months. My interest in neuroscience-architecture started my second year, after taking an environmental systems course that addressed design acoustics and how architects should consider, not just visual theory in design, but also how the body and mind react to the built space.