

Culture, Neuroscience, and Design

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I. EXTENDED ABSTRACT

Does our culture influence how we process sensory information and the sorts of spaces where we live our best lives? Neuroscientists have shown that it does and designers can increase user wellbeing by applying what these researchers have learned about culture and place-based experiences.

Studies have linked how the physical environment is experienced to parameters of national culture identified by Hofstede, Hofstede, and Minkov (individualist or collectivist, accepting of power distance or not, masculine or feminine, tolerant of uncertainty or not, long- or short-term orientation, indulgent or restrained) (2010). Scientists have also tied national culture to preferred physical environments. Neuroscience indicates that curvilinear elements are significantly more likely to be preferred by people from more collectivistic cultures, while people from more individualistic ones find angular shapes significantly more attractive than people from collectivistic ones do, for example (Zhang, Feick, and Price, 2006). Designing for preferences is important because when the space we're in aligns with them, our mood is more likely to be positive (Veitch, 2012), which has beneficial implications for problem solving, creativity, socializing with others, and health, for example (Fredrickson and Branigan, 2005; Isen, 2001; Isen et al. 1985; Segerstrom and Sephton, 2010). In addition, neuroscientists, including Park and Huang (2010), have linked neural function and culture: "there is limited evidence that cultural experiences affect brain structure and considerably more evidence that neural function is affected by culture, particularly activations in the ventral visual cortex – areas associated with perceptual processing."

The design of public spaces that are iconic among particular populations will be examined in a case study format to illustrate how place form should recognize and respond to users' national cultures. Structures in Finland, the Netherlands, the United Kingdom, Italy, the United States, Japan, China, and Turkey will be featured. Applying neuroscience research to inform the selection of specific, culturally-appropriate design elements will be the focus of the presentation.

2. REFERENCES

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Sally Augustin, PhD, is a practicing environmental psychologist, specializing in person-centered design, and a principal at Design With Science (www.designwithscience.com). She has extensive experience integrating neuroscience-based insights to develop recommendations for the design of places, objects, and services that support desired cognitive, emotional, and physical experiences. Her clients include manufacturers, service providers, and design firms in North America, Europe, and Asia. Dr. Augustin, who is a Fellow of the American Psychological Association, is the editor of *Research Design Connections* (www.researchdesignconnections.com), where she has written widely on science-based design for a broad audience of people interested in the designed world.