HOUSTON Methodist LEADING MEDICINE | TEXAN by NATURE | TAMU HEALTH

CHN Executive Brief

Validating Nature Images to be used in Nature and Health Research using fMRI Technology

Background: This study fills a void in the literature by both validating images of nature for use in future research experiments and examining which characteristics of these images are most representative of nature. Understanding semantic categories most representative of nature is useful in developing nature-centered interventions and research that uses neuroimaging modalities, such as fMRI studies.

All validated images are housed in an online repository and we welcome the use of these images by other researchers.

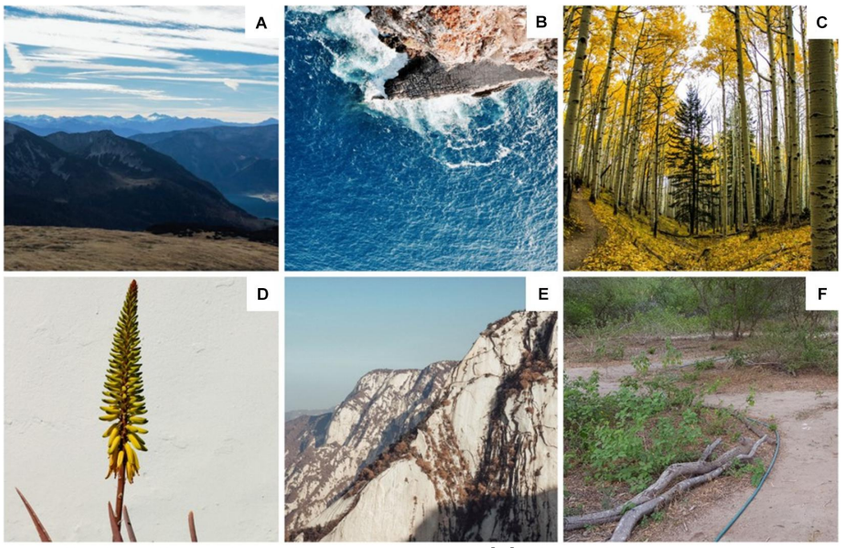

FIGURE 1. Semantic and framing features. **(A)** Atmospheric perspectives, **(B)** bodies of water, **(C)** canopies, **(D)** close-range views, **(E)** mountains, and **(F)** unnatural elements.

Results: The semantic subcategories that were found to be most predictive of high ratings of nature representation included:

Canopies **Bodies of Water** **Mountains**

We found high “naturalness” scores for open spaces and atmospheric perspectives, and low naturalness for close-range views.

Impact: In the past, there has been a lack of available validated nature images for fMRI studies. The use of these validated images will promote the use of fMRI technology to better understand the effects of nature on the human brain and body. Also, controlling for conditions to assess and accurately quantify study results can be difficult to do in the natural environment. fMRI studies using these validated images offer an opportunity to alleviate these difficulties.

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Menser, T., Baek, J., Siahaan, J., Kolman, J.M., Delgado, D. Kash, B.A. (2021). Validating Visual Stimuli of Nature Images and Identifying the Representative Characteristics. AFront. Psychol. https://doi.org/10.3389/fpsyg.2021.685815