Design of a Test for Research on Architectural Features of Streetscape

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Background

The architectural experience may impact people's behavior, health, and well-being, engaging several neural networks. Sensory-motor networks mediate motor responses such as approach and avoidance and spatial navigation in response to stimuli. Limbic networks process feelings and emotions. Memory-related networks support personal experiences, education, and culture. The interaction between architecture and brain sciences is known as neuroarchitecture which promises to offer biologically inspired insights into the design of spaces. We are interested in the study of neuroarchitecture applied to the streetscapes of neighborhoods in South Texas. The primary purpose of this study is to design a cognitive test to assess what architectural features are more memorable.

Methods

The primary aim of the proposed test is to assess the content of memories of architectural features of the neighborhood streetscapes. One approach is through visual and mental imagery. Visual mental imagery is used to reactivate long-term memory and manipulate the visual representation of the stimulus in the absence of the corresponding visual stimulus, giving rise to the experience of "seeing with the mind's eyes." Visual mental images are produced by interrogating the long-term memory (reactivating neural representations) about how visual objects look and maintaining them with the aid of working memory to inspect and manipulate them. The proposed test is based on an interview with questions that evoke visual mental imagery of the street, drawings, and verbal descriptions of the street. We hypothesize that the architectural features that are more memorable would be reflected in the drawings and verbal descriptions of the street. To account for the diversity of visual imagery abilities, we will apply the Vividness of Visual Imagery Questionnaire (Marks, 1973). We will systematically compare the street image from Google Street View vs. the drawing and the verbal description from the same segment, and different scores systems will be explored to test reliability and accuracy.

Results. It will be presented results in three conditions. We will first use the segments of the Canva Street View app to select the streets. In this condition, we will go to those street segments and apply the test (interview). In a second condition, we will choose an aleatory sample of people to interview and use the test in a lab environment. After the interview, we need to determine if the street where the participant lives is upgraded in the Google Street View app; if not, we need to go to that street to check the accuracy of the responses. As a third condition, we will choose an aleatory sample of streets to go there and do the interviews. We will also provide the scoring proposal with the analysis e interpretation of the results of each condition**.**

Conclusions

We presented an experimental test to assess the more memorable architectural features. Such a test must be tested first in a pilot study to refine the test and the scoring proposal. After the pilot study, we propose conducting a field study to assess what South Texas architectural features are more memorable.