

The Operationalizing of Lynch's Cognitive Representation Elements of Large Scale Environments

The result of operationalizing Lynch's (1960) cognitive representation elements of large scale environments is a set of images that can be employed in a research project identifying the various domains of the brain where each of Lynch's (1960) elements occur. With such data, designing wayfinding within buildings: in urban habitats, and even within virtual worlds can be better realized.

The research design will use Siegel and White's (1975) model as a spatial representation of Lynch's (1960) five elements of large-scale environments' physical form. These contents of physical form are classified as followed: paths, edges, districts, nodes, and landmarks. It is well-documented that other influences of spatial representation, such as the social meaning of an area, its function, its history, or even its name, play a part in the development of representations.

Brain research indicates that three of Lynch's contents: paths, edges, and landmarks are cognizable in the brain via neurons action potential of horizontal or vertical lines. Whereas what constitutes nodes and districts are, for the most part, spaces inhabited by other humans, thus associated with communication and socialization. The hypothesis states that cognitive activity in the brain, from observation of paths, edges, and landmarks, will be located in those neural domains seeking vertical and horizontal lines as compared to nodes and districts that will activate locales in the brain dealing with communication and socialization. The goal of the summer 2015 research grant is to have a set of operationalized elements to employ as visual stimuli while conducting brain imagery employing fMRI. The researcher would partner with the Southern Illinois University Center for Integrated Research in Cognitive and Neural Sciences to conduct the fMRI research.