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Keywords

Semiosphere, neurotecture, responsive architecture, personalized space, interdisciplinary, design theories, brain/machine interface, subjective perception, neuroscience, cognitive science, apparatus, spatial quality, experience, virtual reality, augmented reality, advanced architecture, future

Abstract

Santiago Ramon y Cajal's "neuron doctrine" has been ground to evolution in neurosciences concluding that brain structure and behavior are inseparable. On the other hand, a lot of fundamental challenges have been floating around the architectural disciplinary cloud such as:

- The idea of the author and the possibility for a different way of being an author
- "A Concept", the real meaning and it implications
- Perception and the possibility of a user oriented design
- The possibility of an architecture in permanent mutation

The research revolves around the subjectivity of perception and how a mental or physical state can be altered by a space, and how a spatial perception can be an auto-catalyst too. An interdisciplinary model of neuroscience/cognitive science, computer science and architecture is crucial to find answers and better understand the challenges of today's architectural debates.

Throughout I would like to highlight progress so far, the BraneSpace apparatus that simultaneously senses the space, and the user and supplies a real-time data stream; for an objective description of how we subjectively perceive space. Such raw data has the power to change the social meaning of design, architecture and urban planning. Using machine learning, neural networks, "handy neural sensors" and brain-machine interfaces I am creating a more complex version of the BraneSpace apparatus and a learning system by working on the space parameters as inputs and user state as output.

Examples of possible application

- Spatial evaluation software
- Experience replication
- Generating space from a mental/physical state
- Human recognition modules [as to be used by buildings to understand it users and respond accordingly] etc.