



# ANFA 2014 CONFERENCE

**PRESENTER ABSTRACTS**  
ACADEMY OF NEUROSCIENCE FOR ARCHITECTURE



# The Sense of Presence: Utilizing Emotional Feedback

CARLO PASINI

*University of Waterloo, Canada; clpasini@uwaterloo.ca*

MICHAEL PERSINGER<sup>1</sup>; PHILIP BEESLEY<sup>2</sup>

*U.Laurentian<sup>1</sup>; U.Waterloo<sup>2</sup>*

Ideas are prototypical until they occupy a presence that moves and excites the senses. Although architects desire to create idyllic places, the traces of ideas need to be present before spaces can become ideal responses. That is to say, the function of place is not rhapsodic, it is the transformation of space in conjunction with the trace of emotion. Architects spend a great deal of time determining functional requirements in order to designate the formational requirements of the project, but they do not spend equivalent efforts deriving the emotional requirements that partition them. Architects habitually profess that form follows function, but it is as imperative to state in the same sentence that function follows emotion. The natural starting point for this progression is the right temporal lobe: this is where the 'sense of presence' is at work, processing the stimuli tied to experience itself. This is contrasted by the processes of the left temporal lobe's 'sense of self', which determine how experiences are labeled, also referred to as the proto-experience. The projected environment is, thus, inherently tied to the sense of presence: its form, function and emotion must be addressed in terms of feedback signs, mechanisms and loops.

## 1. EXTENDED ABSTRACT

The interdisciplinary collaboration between Neuroscientists and Architects has the potential to generate more approaches for mitigating anxiety, independently of pharmaceuticals and therapy, through the renegotiation of perturbations in the occupant's surroundings. The effects of environmental-stresses on physical and mental well-being have been adequately studied in laboratory research. Certain aspects of genetic expression and cellular regeneration have likewise been proven to be shaped by environmental conditions. It is the responsibility of architects to begin actively integrating the insights yielded by neuroscience into future conducive milieus. The flowering fields of Neuro-Behaviour and Enviro-Design have great potential for their cross-pollination to bear fruits that benefit the public's health.

Dr. Persinger's research into 'the sense of presence' has propped ways for architects to consider how this brain function is specifically stimulated by elements set within the occupied landscape, such as spatio-temporal relationships, audio-visual stimuli, or analogo-digital signifiers. More importantly, his experiments provide precedents for how the 'sense of presence' may be engaged artificially through electromagnetic actuators, inspiring the conception of immersive therapeutic milieus. The responsive landscapes conceived by Arch. Philip Beesley provide fertile ground for developing these testbeds. More than merely being rich sculptural work and expansive multimedia installations, his investigations posit architectural methodologies for interfacing occupants with surroundings of verisimilitude to living ecosystems; he has developed organisational strategies for projecting material into spaces, constructing meaning into places and detecting traces of presence. Ultimately, the degree to which occupants sense presence in their surrounding can impact how much meaning they draw from the experience, overturning emotional depression and lowering anxiety-related stresses.





## ACKNOWLEDGMENTS

The behavioural neuroscience lab is maintained by Laurentian University and the research is funded by private donations related to Dr. Persinger's private practice. PBAI's R&D on responsive installations is funded by CFI, SSHRC, NSERC and CCA.

## 2. REFERENCES

Adolphs, R. (2001). The neurobiology of social cognition. *Current Opinion in Neurobiology* 11, (2) p.231-239.

Persinger, M.A. The sensed presence can be predicted. *International Journal of Neuroscience*: 2005, issue 115, p.1039-1065. 2006, issue 116, p.1-18.

Beesley, P. *Near-Living Architecture: Work in Progress*. Toronto: Riverside, 2014

## 3. AUTHOR BIOS

**Carlo Pasini** is a graduate student at the University of Waterloo's School of Architecture with integrative capacities. Carlo's interest in the overlap between neuroscience and architecture stems from his personal experiences with cognitive therapy, neurological testing and neuropsych assessments due to his history with head-injuries. His on-going research explores how ideas are individuated through the heuristic iterations of autotelic acts. His Graduate thesis focused on the Hellenic Architekton's role as the astute, lucid and obstinate intermediary of principles. Carlo is in the process of editing five independent research papers for publication: The 'Anarchitecture' of Way-finding via the Information Communication Network; The Tektology of the Working Body; Framing the Experience of the Basilica Santa Maria in Trastevere; Monumental versus Ephemeral Concrete Casting.

**CPsych, Dr. Michael Persinger** is a professor at Laurentian University. His Masters of Physiological Psychology is from the University of Tennessee and his Doctorate of Behavioural Neuroscience is from the University of Manitoba, Canada. A relative of Frank Lloyd Wright, Architecture has always been one of Dr. Persinger's keen interests. He has carried out studies on the mental health effects that acoustic and lighting perturbations have over the cognitive performance of students during lectures and examinations at Laurentian University.

His personal practice and research is interdisciplinary. He has conducted a vast number of experiments using extremely low frequencies, testing its effects on the circadian patterns of the mind and on neural stem cell proliferation. Dr. Michael Persinger has been published in numerous scientific journals, peer reviews, and books as well as featured in documentaries.

**MRAIC OAA RCA, Philip Beesley** is a professor at the University of Waterloo's School of Architecture. A practitioner of architecture and digital media art, he was educated in visual art at Queen's University, in technology at Humber College, and in architecture at the University of Toronto. At U. Waterloo, he serves as Director for the Integrated Design and Manufacturing Group, as well as the Director for the Riverside Architectural Press. He also holds the position of Examiner at the University College, London. Philip has authored and edited eight books dealing with alterity and the chthonian definition of space. He has also been featured in an extensive selection of academic and popular publications. His Toronto-based practice PBAI is an interdisciplinary design firm that provides architectural services for public buildings, exhibition sets, lighting displays, and theatre stages. His designs focus on emotion in search of alternate paradigms to Modernism. PBAI has also experimented with proto-cellular growth as carbon sequestration strategies for interior spaces.