Experiential Design – Rethinking relations between people, objects and environments

• Paper / Proposal Title:
Design of dynamic architectural experience by the analysis of sensory fields

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• Abstract (300 words):
One of the fundamental problems faced by contemporary architecture is excessive emphasis on the scenographic, conceptual, symbolic aspects of architectural meaning. Voices in the profession call for closer attention to the concrete, embodied aspects of experience, and to the multisensory apprehension of space, light, sound and form. Thus, Kenneth Frampton employs August Schmarsow’s notions of Raumgefühl (feeling for space) and Raumgestalterin (forming of space) in his search for architectural meaning generated by freely moving individuals rather than stationary spectators looking for intellectual insight. The challenge is to understand how space is articulated by the built environment and how this articulation is experienced by human beings in real time. Here an architect and a scientist join forces to tackle this challenge using ideas and tools emerging from the rapidly evolving collaboration between architecture and the “human sciences” that include neuroscience, cognitive science, sensorimotor psychophysics, and experimental phenomenology. Our starting point is the basic notion that adjacent locations offer the person different experiences and sensorimotor affordances, thus creating a continuous field. We show how methods of psychophysics and systems
neuroscience help to reveal the detailed structure of this field and predict sequences of experiences derived from individual senses. For example, we study how the person traversing space acquires sensory access to some features of the environment and loses access to other features, akin to the isovist analysis of optical occlusion but also considering more subtle variations in sensory access within unobstructed view. These concepts can help the architect to shape dynamics of experience in addition to its spatial structure, in full view of the complexity of the temporal relationship between the moving person and the environment. We conclude by illustrating how this interdisciplinary approach leads to developing practical tools for analysis and design of the built environment.

**Author(s) Biography (200 words each):**

**Sergei Gepshtein**, Ph.D., is trained in neurobiology (Weizmann Institute), experimental psychology (University of Virginia), and vision science (University of California at Berkeley). He has been a scientist at RIKEN Brain Science Institute, Japan, and now at the Center for Neurobiology of Vision at the Salk Institute for Biological Studies, La Jolla, California. Since 2015 he is the director of the Collaboratory for Adaptive Sensory Technologies at the Salk Institute. In 2018 he also joined faculty of the School of Cinematic Arts at the University of Southern California, Los Angeles, where he directs the Center for Spatial Perception & Concrete Experience. He has served as an editor of scholarly publications that include *Journal of Vision, Cognitive Processing*, and *Oxford Handbooks* at Oxford University Press. He is a founding member of the USC World Building Institute and the inaugural recipient of the Harold Hay Award (2013) from the Academy of Neuroscience for Architecture whose Board of Directors he joined in 2016. He is recipient of grants and awards from the Swartz Foundation for Computational Neuroscience Research (USA), National Institutes of Natural Sciences (Japan), National Institutes of Health (USA), National Science Foundation (USA), and the Kavli Foundation (USA).

**Tatiana Berger** holds a Master of Architecture degree from Princeton University and a B.A. in Architecture from the University of California, Berkeley. She has 25 years of international experience in professional practice and education. In addition to building diverse projects in Austria, Portugal, China, and USA, her professional experience includes landscape and environmental design, furniture/product design, and project management. Her numerous built works were included in international periodicals and presented in exhibitions including the Venice Biennale. She has worked with Juhani Pallasmaa, William JR Curtis, and Alvaro Siza on experiential design that explores the relations between people and environments. She is Associate Professor of Graduate Architecture at the NewSchool of Architecture & Design in San Diego, where she teaches design studio, architectural theory, thesis research, and neuroscience for architecture, having taught also at the BAC in Boston. She is on the Advisory Council for the Academy of Neuroscience for Architecture and is co-founder of the Compostela Institute: an
interdisciplinary laboratory for research and education in environmental design and building crafts in Santiago de Compostela, Spain.