Homeodynamic Environments, Homeodynamic Products and Intelligent Biointerfaces: Affective and Pleasurable Design to Maintain and Restore Human Homeostasis

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Abstract

From the perspective of homeodynamics (ROSE 1998), life regulation processes, and the resulting balance achieved, unfold in a dynamic flow and in continuous transformation. That differs from the possible idea of a fixed and immutable balance. Prominent within this perspective is the concept of “Homeodynamic Environments and Products,” coined by the co-founders of the DASMind [Design, Art, Space and Mind]—UNICAMP Transdisciplinary and Cooperative Research, Innovation and
Outreach Network, also authors of this chapter. This concept, in dialogue with intelligent biointerfaces, proposes the affective and pleasurable design of environments and products aimed at maintaining and restoring human homeostasis. Therefore, they draw on a transdisciplinary and complex approach to understand the conception, design, planning, development and implementation of architectural and urban environments, as well as physical and/or digital products, in deep synergy with individuals’ body-mind-spirituality sphere. Environments and objects become crucial elements in the body’s continuous and dynamic internal adjustment process. As preventive and restorative for health and well-being, affective and pleasurable homeodynamic environments and products are not merely designed as passive elements, but rather to act consistently and dynamically on the human organism.

Keywords

Homeodynamic architectural environments

Homeodynamic urban environments

Homeodynamic physical and/or digital products
Notes

1. The DASMind [Design, Art, Space and Mind] | UNICAMP Transdisciplinary and Cooperative Research, Innovation and Outreach Network is dedicated to theoretical and applied research in the transdisciplinary fields of architecture, urbanism, design and art, related to the areas of
cognitive sciences, neurosciences, artificial intelligence, bioengineering, health sciences and education. Further information at: https://www.iar.unicamp.br/dasmind [107].

2. The ideal homeodynamic range “is not absolute – it varies according to the context in which an organism is situated” [14]. Near the ends of the homeodynamic range, “the viability of living tissue declines, and the risk of disease and death increases; in a certain segment of the range, however, living tissue thrives and functions more efficiently and economically. Functioning close to the range ends, even for only brief periods, is actually an important advantage in unfavorable living conditions, but it is still preferable for states of life to function close to the efficient interval” [14].

3. The circadian rhythm acts like a biological clock that, even in the absence of light, keeps our neurophysiological functions minimally regulated for an approximate period of 24 h [105].

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