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Response and Responsibility  
of the Systems Sciences**

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**European Meetings  
on Cybernetics and Systems Research**

*Jennifer Wilby, Stefan Blachfellner, Wolfgang Hofkirchner (Eds.)*

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# II A 1

## Architectural ecologies: code, culture and technology at the convergence

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It is the basic characteristic of every organic system that it maintains itself in a state of perpetual change of its components. This we find at all levels of biological organisations. Bertalanffy, 1968 Architectural Ecologies: Code, Culture and Technology at the Convergence operates on the architectural interface between system theory, computation and biology, focusing on processes that are described as an alloy of technology, ecology and culture. The symposium opens a discussion on urbanity-systems, defined as coded, self-organising organisms structurally based on circular observation, feedback and learning, to a field of experts that can empower the discipline through a dynamic exchange within system theory. Since in C21 virtual and material reality merge and take on the form of code, architecture challenges the development of its own expertise at the understanding and description of structures as systems (living and non-living, virtual and material) in a spatial-temporal evolution. A critical understanding of this construct is required to enable the design of design strategies for apparent complexity. Therefore the debate targets the deep impact of system theory as culture, and simultaneously describes a frame for post- digital, namely biological, tools to become an element that allows for the understanding of urban and natural systems as a whole.

### List of Contributors

**Paolo Alborghetti, Alessio Erioli**: The Red Queen hypothesis: chemotactic stigmergic systems and embodied embedded cognition-based strategies in architectural design

**Anna Barbara**: Shapes of time

**Henriette Bier, Seyedsina Mostafavi**: Data-driven architectural production and operation

**Ledian Bregasi, Renis Batalli**: Self regulation as a tool for the management of the complexity in architecture

**Ali Farzaneh**: Evolutionary computation of architectural objects

**Tim Ireland, Emmanouil Zaroukas**: Actuating (auto)poiesis

**Alexandros Kitrinariis**: Neuronal ecosystems, towards an ecology of aesthetics

**Alessandro Melis, PengFei Li**: City retrofitting through cultivable envelopes



**Jeffrey Nesbit:** Urban ontological systems

**Kelvin Rojas:** On biogenous systems: symbiotic relationships, sustainability, and an inquiry on the foundations of a complex systems culture

**Antonino Saggio:** Urban green line: a new infrastructure between past and future for the city of Rome – Abstract with Distinguished Lectures Section

**Liss Werner, Lila PanahiKazemi, Andrea Rossi:** Architectural ecologies: code culture and technology at the convergence



# Architectural ecologies: code, cultures and technology at the convergence

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**Abstract:** The architects of the future will be more busy designing the shapes of the time instead of the forms of space. Is on time dimensions that are launched the new technological, semantic and cultural challenges. The geometry of Euclidean space are bent to the new imperatives of the many temporalities of the contemporary world.

**Keywords:** time, architecture, mobility, modality

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# 1 Shapes of times

If we were to analyze systematically the parameters of today planning we would see that contemporary (and not contemporary) architects are more concerned in designing the forms of time rather than spatial ones.

Time-based space occupies the realms of invisibility and virtuality. Plus, it deals with the movements made by the dynamic observer that XX century had started to follow close.

When Gilles Deleuze imagined the foldings of space, he was foreshadowing what the new infrastructures of transport and information would have produced, relentlessly deforming the relationship between space and time.

The measure of mobility is rarely calculated in meters, and more frequently in seconds, hours, days. It is the time-based parameter that defines the price of a trip, more than the real spatial distance. Once the bodily experience of movement is lost, the time employed is what really counts.

Thus new geographies are drawn anew: the suburbs outside the cities sink in the folds of exclusion and distance, while city centers are ruled by other proximities, positioned along the same speed vector.

In this folded, sometimes only ruffled territory, the cardinal points allowing multiscale and intermodality are those hubs facilitating a shift of transport, speed and scale.

The media that can convert movement in mobility (i.e. the movement of the whole system, not of the single individual) become the protagonists of the updated planning of places.

It is therefore an extraordinary association of transports and media that allows to reach *synchronicity* and *ubiquity*.

*Synchrony* is one of the aims of the system. While all the points are dynamic, the space/time appointment is the only possibility of real encounter. The dynamic point encounters another one only and solely if it also meets its schedule

*Ubiquity*, which in old utopias we believed could be reach with powerful dematerialization machines, was instead obtained thru new media and their high-fidelity. These bring us to be omnipresent in different places and realities. Ubiquity is a radicalization of simultaneity and mobility without movement; in this case the most plural forms of time come to the forefront, rather than the individual forms.

*Spazio e tempo sono le coordinate mentali del corpo in movimento, sono in fondo una stessa e unica cosa: perciò si parla di "spazio di tempo". (Carl Jung, 1976.)*

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