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Editorial

Special Issue on Second Generation General System Theory

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Abstract: The aim of this editorial is to briefly introduce some papers of different nature presented by the contributors to the special issue on "Second Generation General System Theory". These contributions have been focused on the need for building a *post-Bertalanffy* Systemics, based on new problems, representations, and approaches to complexity. Furthermore, such new Systemics is expected to be able to *theoretically generalize* new related systemic concepts and approaches introduced by different disciplines. Such a theoretical generalization is going to coincide with a new kind of interdisciplinarity. The latter should substitute the classical one, based on considering problems and solutions within a discipline as equivalent to problems and solutions within another one. This equivalence was used within the framework of general systemic concepts like Anticipation, Completeness, Feedback, Finality, Forecast, Separability, Openness, and Reversibility. The contributions contained in this special issue constitute very interesting examples of new approaches and of their possibilities of theoretical generalization. Therefore, the issue itself can be considered as a window on the new Systemics and its challenges.

Keywords: coherence; deconstruction; dissonance; interdisciplinarity; isomorphism; measurement; mesoscopic; network; property; quantum; system; theory; transdisciplinarity

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The eight accepted contributions published in this Special Issue may be divided in four categories:

(1) New understanding of the concept of system in the articles:

- Beyond an Input/Output Paradigm for Systems: Design Systems by Intrinsic Geometry by Germano Resconi and Ignazio Licata.
- A Contextualised General Systems Theory by Kirsty Kitto.

(2) Review of the existing knowledge about a special kind of systems in the article:

- Adaptive Systems: History, Techniques, Problems, and Perspectives by William S. Black, Poorya Haghi and Kartik B. Ariyur.

(3) Proposals of new concepts and understanding of System Theory in the articles:

- Postmodern Fuzzy System Theory: A Deconstruction Approach Based on Kabbalah by Gabriel Burstein, Constantin Virgil Negoita and Menachem Kranz.
- Networks as a Privileged Way to Develop Mesoscopic Level Approaches in Systems Biology by Alessandro Giuliani.
- Understanding Musical Consonance and Dissonance: Epistemological Considerations from a Systemic Perspective by Nicola Di Stefano and Marta Bertolaso.

(4) Theoretical issues, such as measurement and general isomorphism, in the articles:

- Relativity with Respect to Measurement: Collapse and Quantum Events from Fock to Cramer by Leonardo Chiatti and Ignazio Licata.
- On the Isomorphism between Dissipative Systems, Fractal Self-Similarity and Electrodynamics. Toward an Integrated Vision of Nature by Giuseppe Vitiello.

These contributions may be further classified as coming from disciplinary interests and approaches, specifically from Biology, Computer and Information Science, Engineering, Environmental studies, Mathematics, Physics, and Technology. We did not receive contributions from disciplines like Cognitive Science, Economics, Education, and Medicine. Even if the call was very diffusive, it is possible, however, that some specific, practical reasons may have contributed to this kind of disciplinary contributions.

The eight contributions are of a high theoretical level and very useful to introduce and outline representations, problems, and approaches to be considered.

We remark here how the concept itself of system is under examination. For instance, when problems and properties having systemic nature are represented as networks in Network Science [1–5], the systems themselves are represented as networks, a circumstance introducing a sort of interdisciplinarity, while systemic properties are considered as properties of such networks, giving rise to a transdisciplinary approach. Within this context the Network Science is eventually identified with the second Systemics tout-court. However, even Quantum Physics should be considered as source of new concepts and approaches suitable for theoretical generalization. Indeed, the quantum approaches allow a number of different representations, as well as a theoretical description of critical interactions with the environment, and of dissipation [6–9].

We would like to conclude this brief editorial by mentioning some problems related to the very general framework *where* the new Systemics can develop:

(a) Is the Bertalanffy's dream of a *General System Theory* still conceivable, such as happens in *unified models*?

(b) Shall the general scientific and humanistic culture be integrated without reductionisms, integrating Systemics and Systems Science?

In conclusion, we think that this Special Issue introduced very interesting and original contributions for a general understanding of a new Systemics where the general coherence and its properties should represent the theoretical essential.

Conflicts of Interest

The authors declare no conflict of interest.

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