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# Facing Critical Situations by Improved Holon-Based Event Flow

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**ABSTRACT**
*Facing critical situations means handling them with a good understanding of their complexity: this calls in turn for a class of new models as well as for associated methodologies for dealing with systemic failures. A system by our approach is merely a restriction of the cartesian automaton of the states of existence of its constituent parts. Any of such composite states becomes, by the principle of abstraction, a state in the behavior of the new system. Since any interaction among systems implies a restriction of their global cartesian state automaton, interactions represent a valuable information in order to discover a feasible criterion for eliciting new systems - albeit not "concrete" systems in the classical sense.*
*For example relationships among systems are nothing but systems on their own, having related systems as component parts. This suggests that the very notion behind system discovery and modeling is thus inherently dynamical. Such a dynamical characterization can be shown to furnish formal and methodological instruments in order to enrich the early notion of Holons by Koestler. Holonic part-whole hierarchies, named "holarchies", require to introduce a new taxonomy for event signals in order to have the internal dynamics of systems to deal with the interface of component systems. This reduces the overall complexity by allowing to modularize and partition mutual control and feedback among hierarchically related modular systems. It is finally shown that the proposed approach allows to models a hierarchy of system failures at different levels in the holarchy, which can be effectively be used in order to analyze and prevent complex critical situations.*