The Wild Side of Societal Self-Organization

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The main target of this lecture lies in presenting an overview of a special type of societal self-organization process which shares a unique characteristic. Processes of this type exhibit a distribution of a very large number of minor or marginal events and a rare occurrence of events with very large-scale and, quite frequently, very adverse effects and consequences. In the words of Didier Sornette (2002, 2006), these self-organization processes follow along a wild distribution in contrast to the mild distributions like the Gaussian normal distribution.

This type of processes which will be labelled as RISC (Rare Incidents with Strong Consequences) can be found in a wide variety of societal domains and can be identified in innovation processes, in the international finance system or in the income distribution of contemporary societies. Processes of this type are inherent in the operations of the modern globalized information and communication technologies with rare occurrences of major network failures with wide-spread and disastrous consequences and a large number of small and local network defects, in the production of scientific articles where a small number of articles has a large impact and a very high number of papers possess marginal or zero impact only or in migration and horizontal mobility processes with a small number of very large agglomerations or cities and a large number of medium or small settlements. They appear in language formation and they are present in the natural environment like in earth-quakes, forest-fires or eco-systems. Thus, this type of self-organization process appears in a large number of domains inside and outside of contemporary societies.

The lecture will present several models and generative mechanisms for this relatively new type of societal self-organization process and will discuss towards the end some of the implications for the robustness and the sustainability of contemporary societies.

Relevant Literature:

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