Table I.1
Goals for a Developmental Theory

1. To understand the origins of novelty.
2. To reconcile global regularities with local variability, complexity, and context-specificity.
3. To integrate developmental data at many levels of explanation.
4. To provide a biologically plausible yet nonreductionist account of the development of behavior.
5. To understand how local processes lead to global outcomes.
6. To establish a theoretical basis for generating and interpreting empirical research.

Also necessary and sufficient conditions to describe an agent-environment system?

Table 10.1: Discrimination criteria for SOC and non-SOC systems.

Process	Criterion 1: Statistical independence of events	Criterion 2: Nonlinear growth phase	Criterion 3: Random rise times	Occurrence frequency distribution of energy	Waiting time distribution
Stationary SOC	Yes	Yes	Yes	Powerlaw	Exponential
Nonstationary SOC	Yes	Yes	Yes	Powerlaw	Powerlaw
Hierarchical SOC					
–Coupled	No	Yes	Yes	Powerlaw	Powerlaw
–Filtered	Yes	Yes	Yes	Powerlaw	Powerlaw
Self-Organization	No	No	No	Powerlaw	...
Brownian Motion	No	No	No	...	...
MHD Turbulence	No	No	No	Powerlaw	Powerlaw
Forced Criticality	No	Yes	Yes	Powerlaw	...
Percolation	No	No	No	Exponential	...
Chaotic Systems	No	Yes	No	Exponential	Quasi-periodic

Aschwanden, M. J. (2011). *Self-Organized Criticality in Astrophysics. The Statistics of Nonlinear Processes in the Universe* (p. 420). Springer Praxis Books.