

Emergence (glossary)

Towards a Method to Describe Resilience to Assist in System Specification >
emergence

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The principle that whole entities exhibit properties which are meaningful only when attributed to the whole, not to its parts. Every model of a human activity system exhibits properties as a whole entity which derive from its component activities and their structure, but cannot be reduced to them. (Checkland 1999)

Source

Checkland, P. B. 1999. *Systems Thinking, Systems Practice*. Chichester, UK: John Wiley & Sons Ltd.

Discussion

There are other views of emergence which are not captured in Checkland's definition. Emergence has two aspects to it (like two sides of the same coin): One, for a given object, some of its properties may be identified as emergent with respect to a description of the object in terms of interacting elements. Two, if a set of given elements are allowed to interact, the resulting system may have properties that are not found in any one of the elements; these are the properties emerging as a result of the interaction and are therefore called the emergent properties of the system. In the first case, emergence arises as a result of the mode of description (no physical action or change involved), in the second case emergence arises as a result of a physical action or change (making the objects interact).

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