Systems and Models

Environmental Systems #1

Marburg Open Educational Resources

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Models
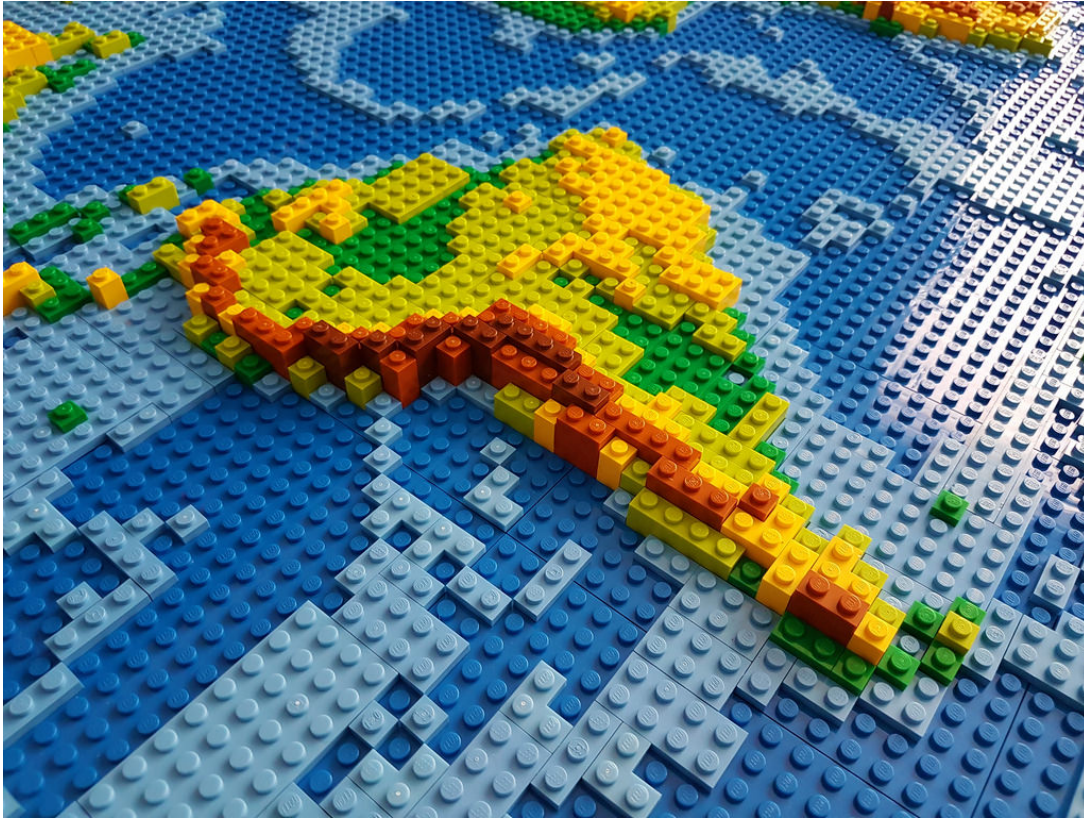
- Mapping

- Reduction

- Pragmatism

Models

Properties of Models

- Models are simplified representation.

- Their purpose is related to a specific problem.

- Their purpose defines their validity.

- Dynamic models of systems
  - The structure of a glass-box model must be in line with the structure and interactions of the system.
  - The model output must be within a reasonable range of empirical results.

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Properties of Systems

- Systems serve a special purpose.

- Systems have specific components and a specific structure.

- The integrity of systems is destroyed if a single component is removed.

- System changes result from influences of the surroundings, from the internal system composition or from a combination of both.

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Dynamic Systems | Boundaries and Feedbacks

- A system has a surrounding environment.

- The environment has an influence on the system and the system has an influence on the surrounding.

- By definition, no feedback is possible between a system and its surroundings.

- System changes result from influences of the surroundings, from the internal system composition or from a combination of both.
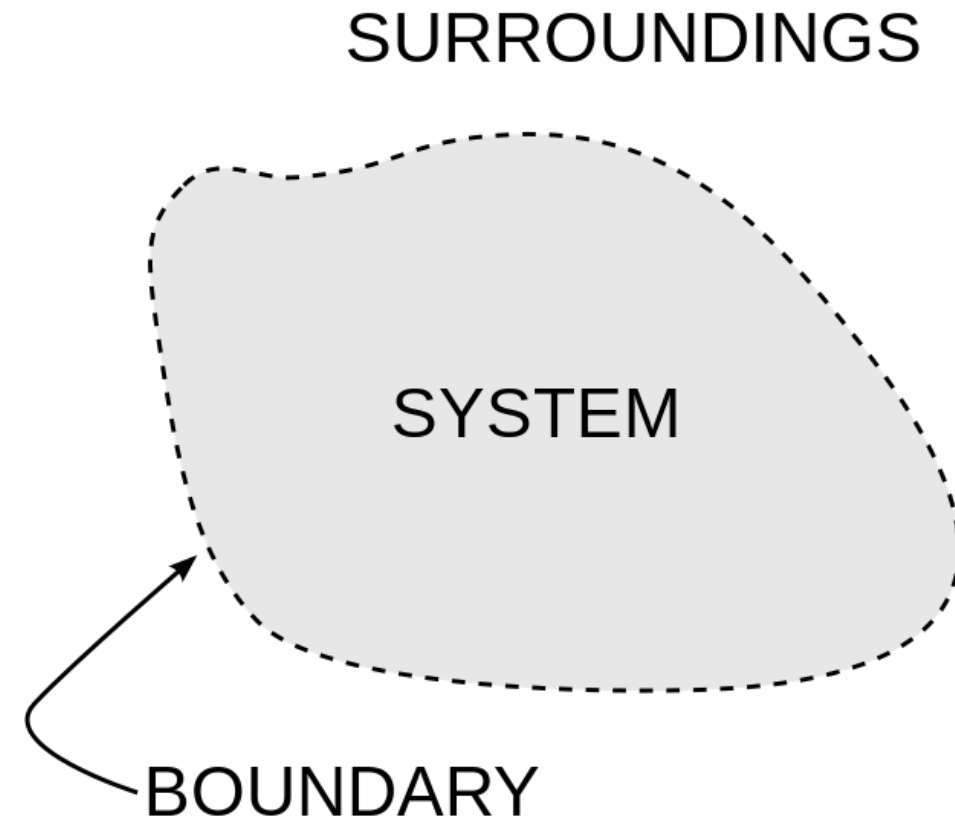
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