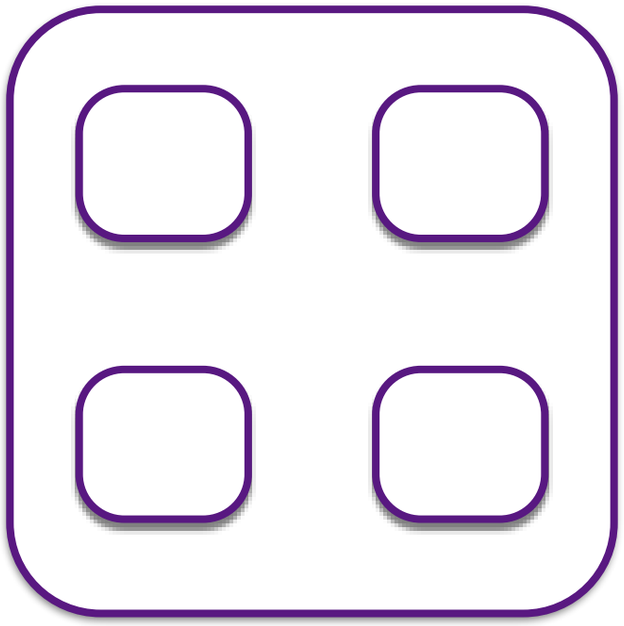
Foundation Stone #2

Systems Literacy

By Dr. Robert Gilman

The Systems Perspective…

- sees **parts** and **wholes** equally



The Systems Perspective…

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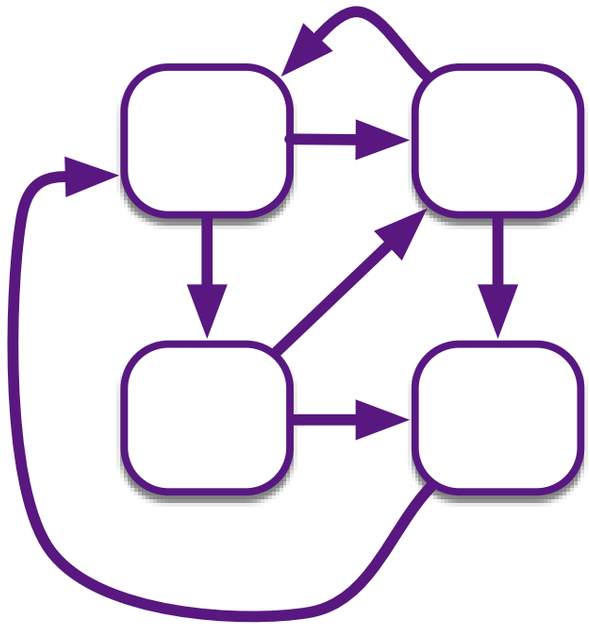

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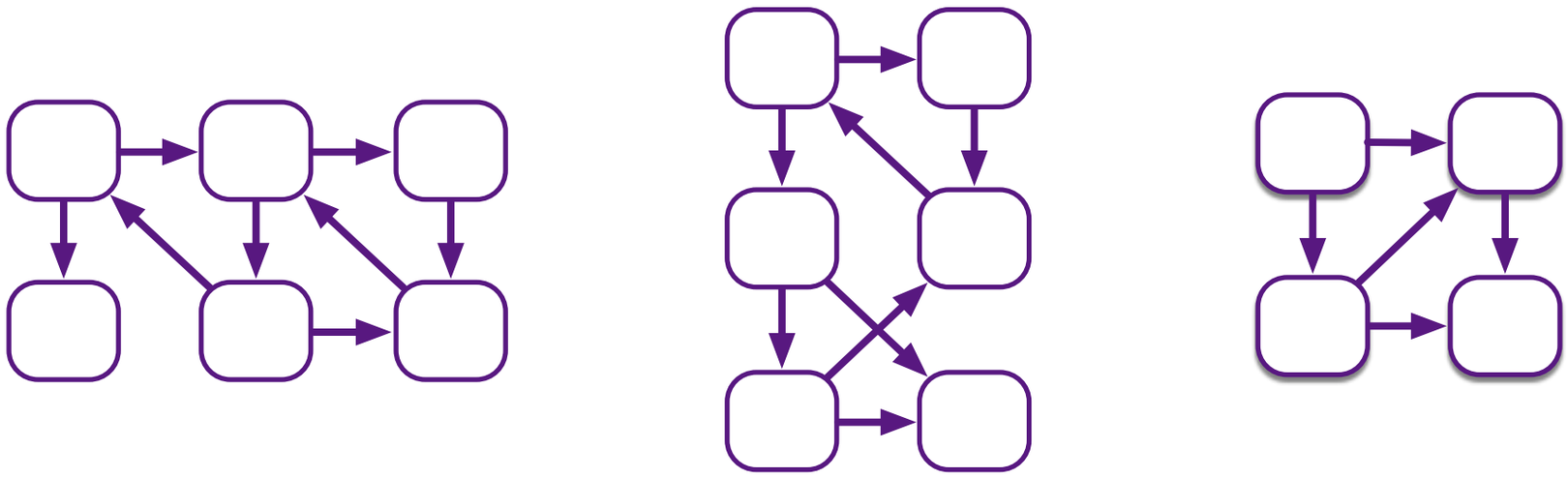

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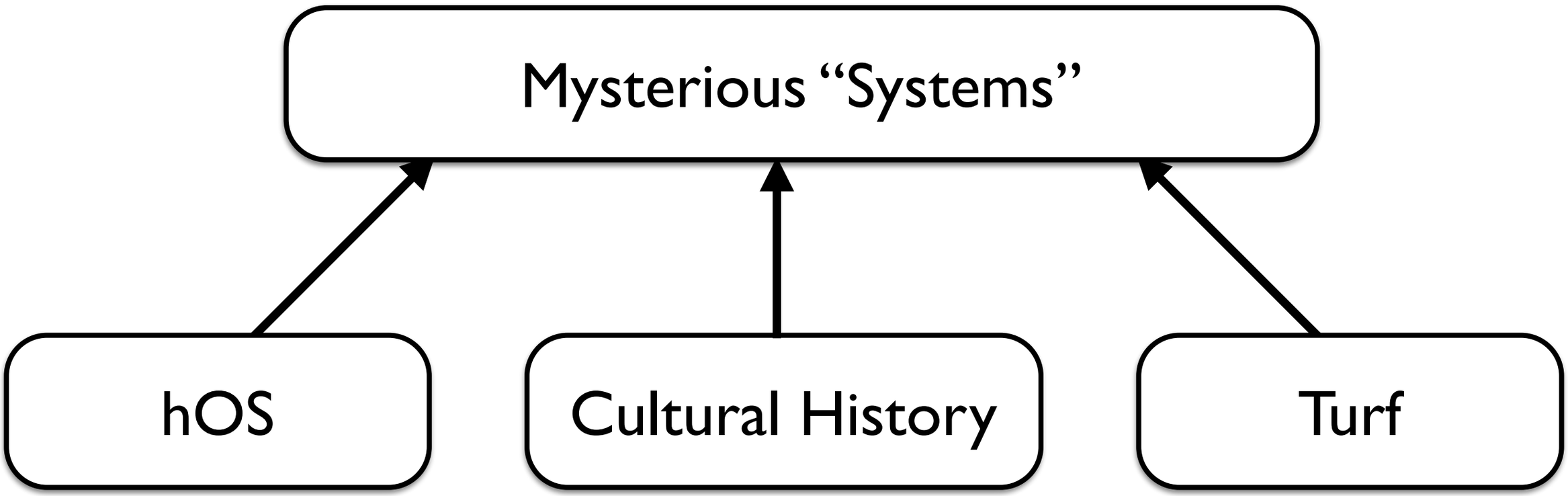
You are "systems literate" when you can see the world from a systems perspective.

The Challenge

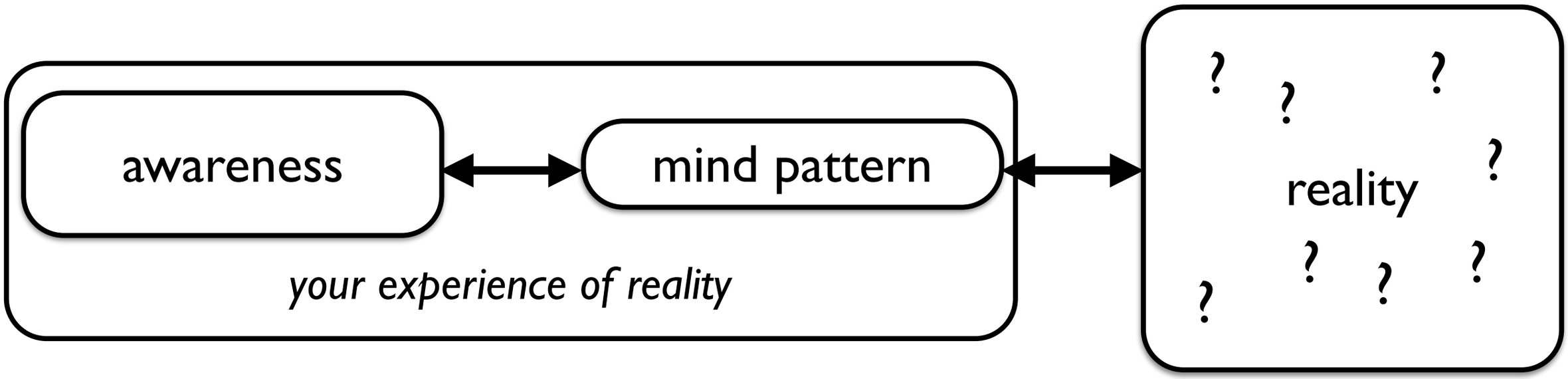
Mysterious “Systems”

The Challenge



What Is A System?

- A mental construct



- a way of organizing our experience into conceptually useful patterns
- partial, selective and provisional

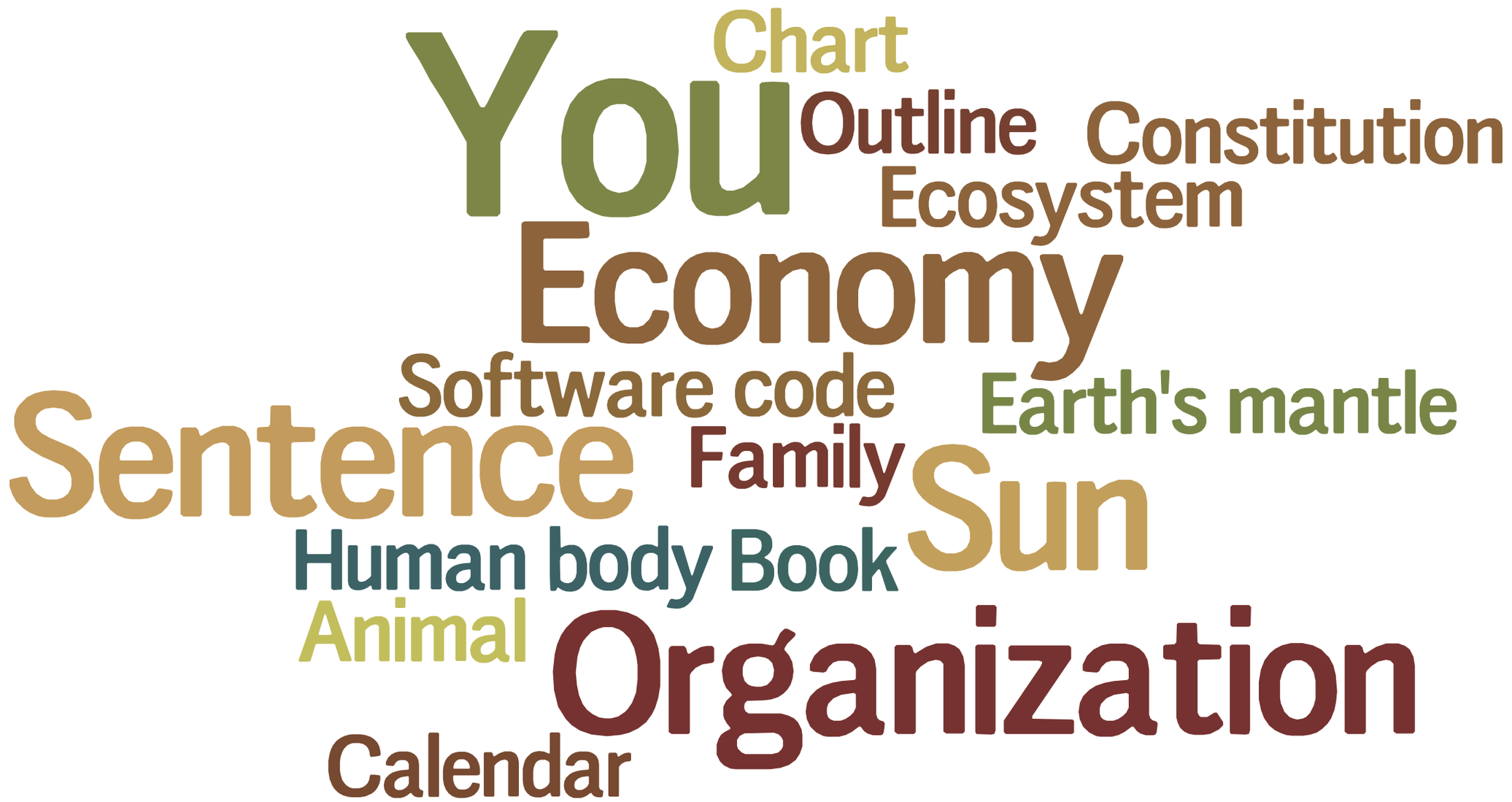
What Is A System?

Common language definition:

system = a set of interacting or interdependent components forming an integrated whole.

What Is A System?

Examples that fit the definition:



What Is A System?

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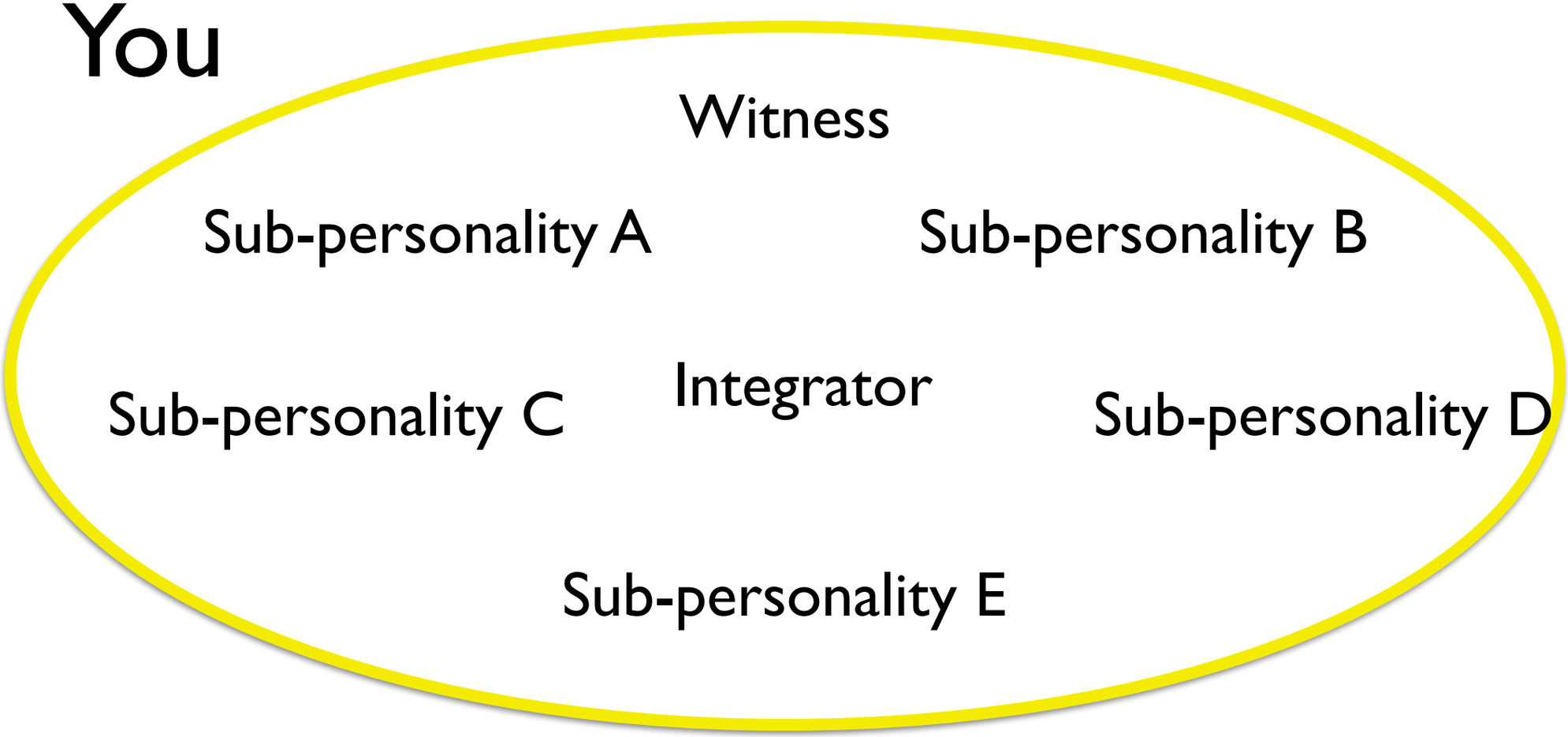
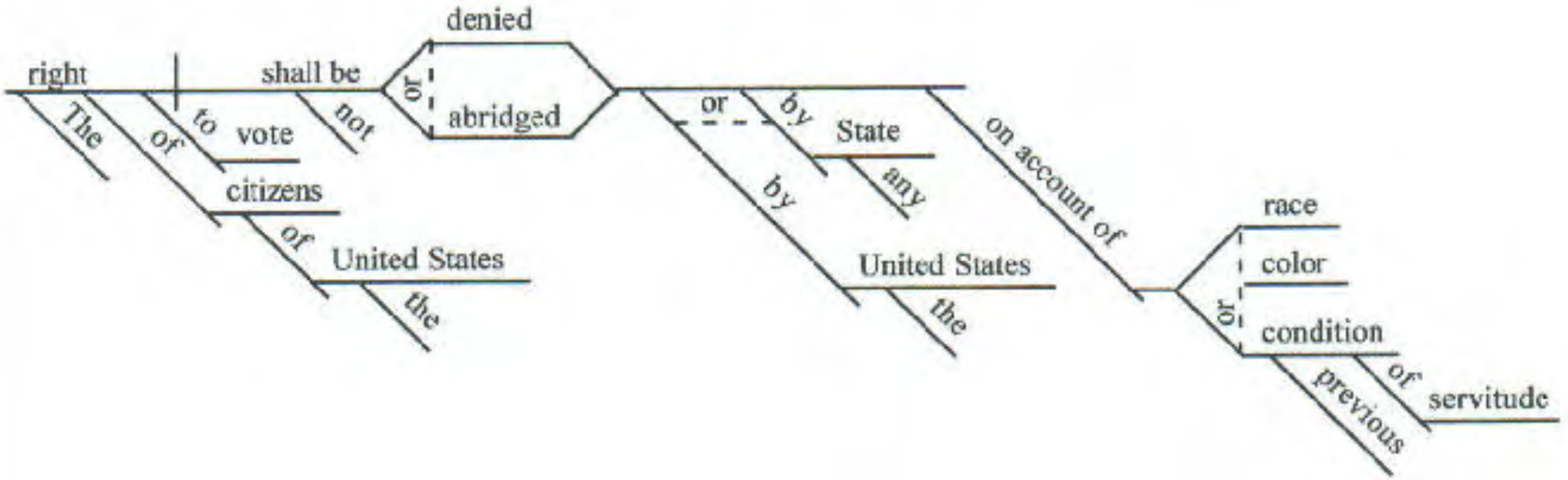


What Is A System?

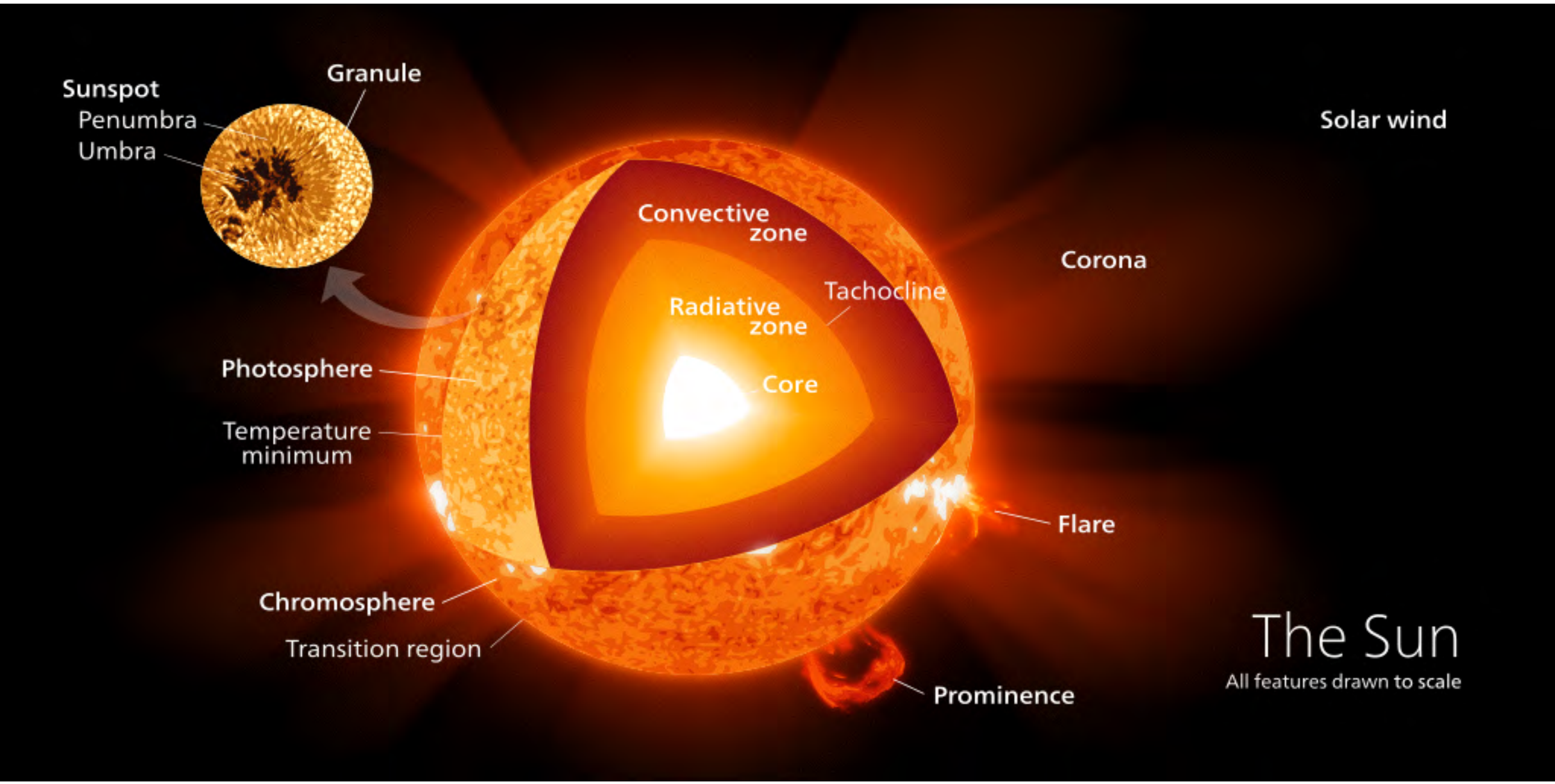
Examples that fit the definition:

Sentence



What Is A System?

Examples that fit the definition:



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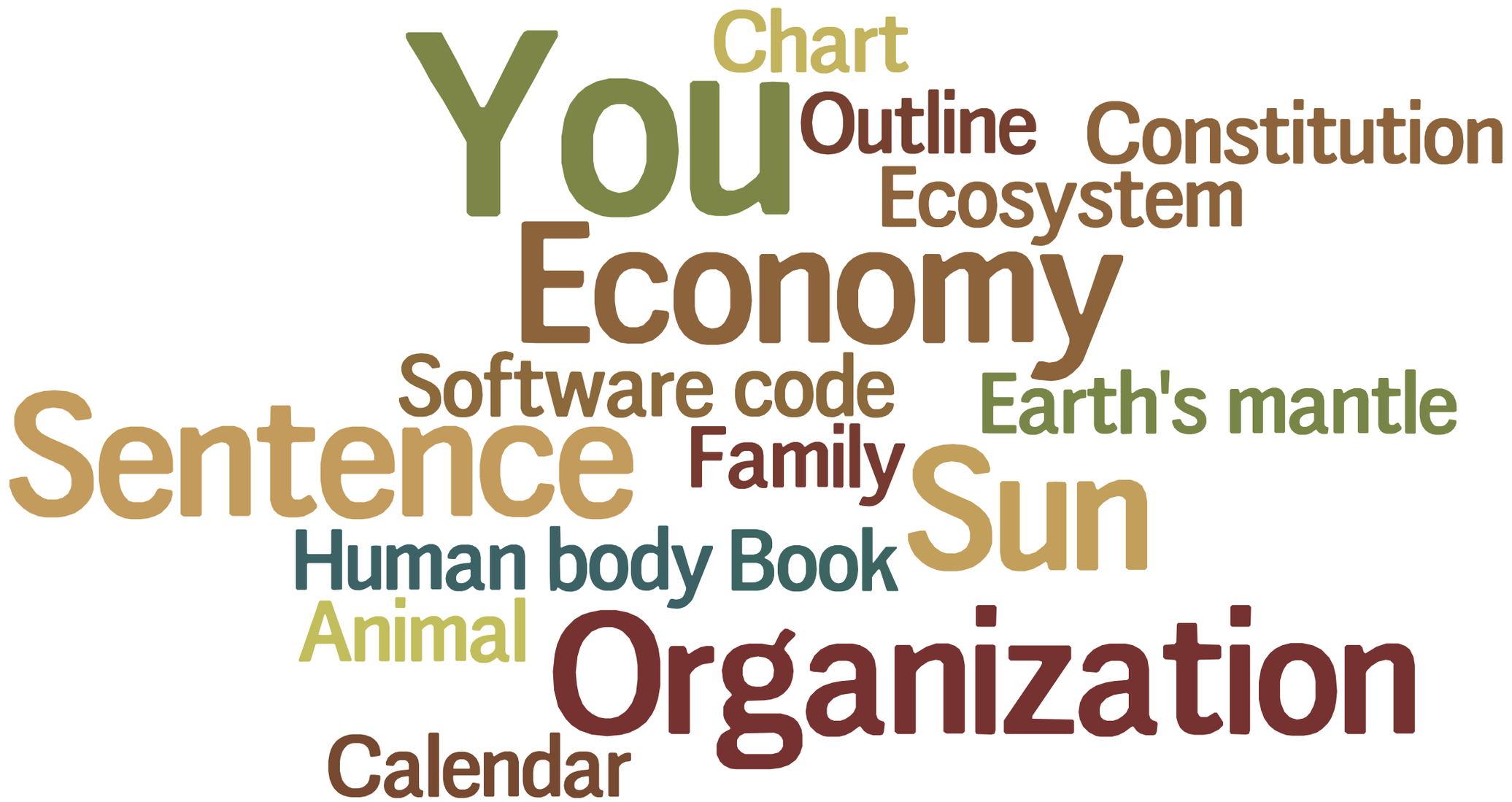
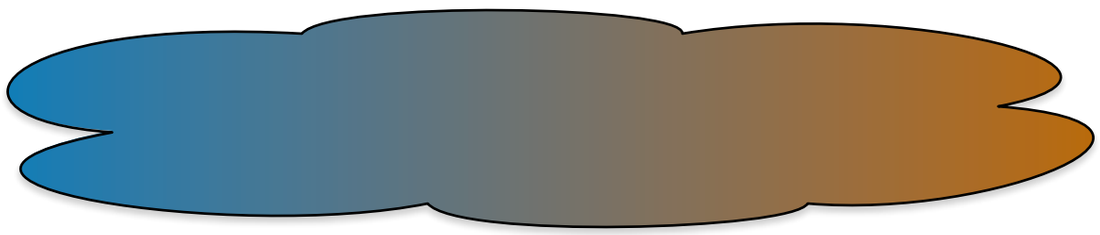


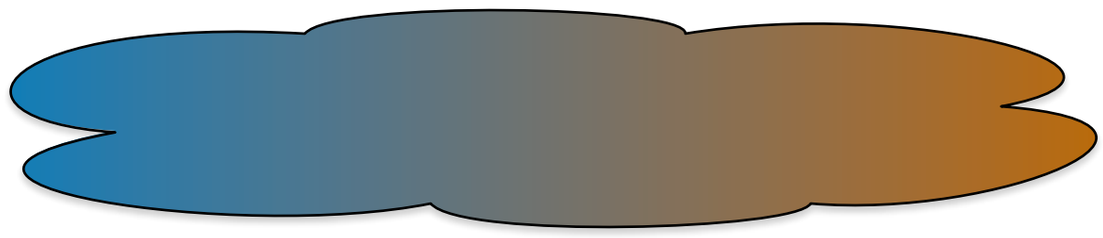
Maps And Territories

Territories are real,
with one intrinsic set of characteristics
and an unknowable depth of detail.



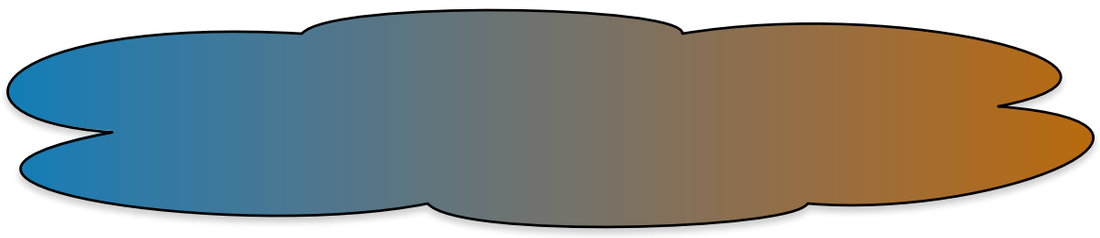
Maps And Territories

Maps are derivative,
created by people
using selective information
about a territory
to serve some purpose.



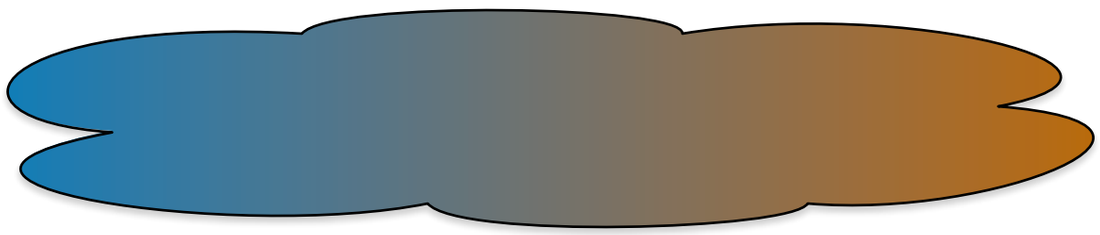
Maps And Territories

Any single territory
can have many valid maps
serving diverse uses.



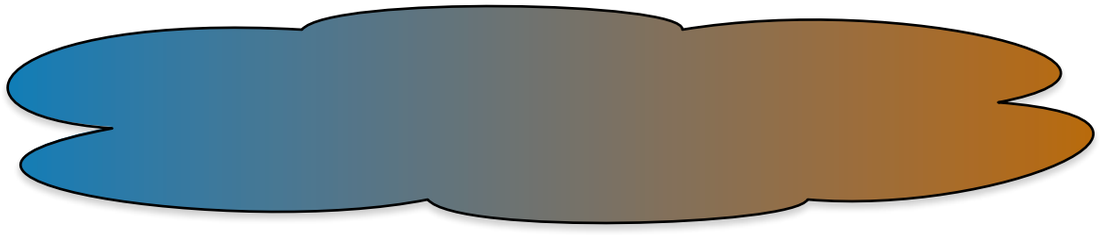
Maps And Territories

Questions for territories:
What are your characteristics?
What do you contain?



Maps And Territories

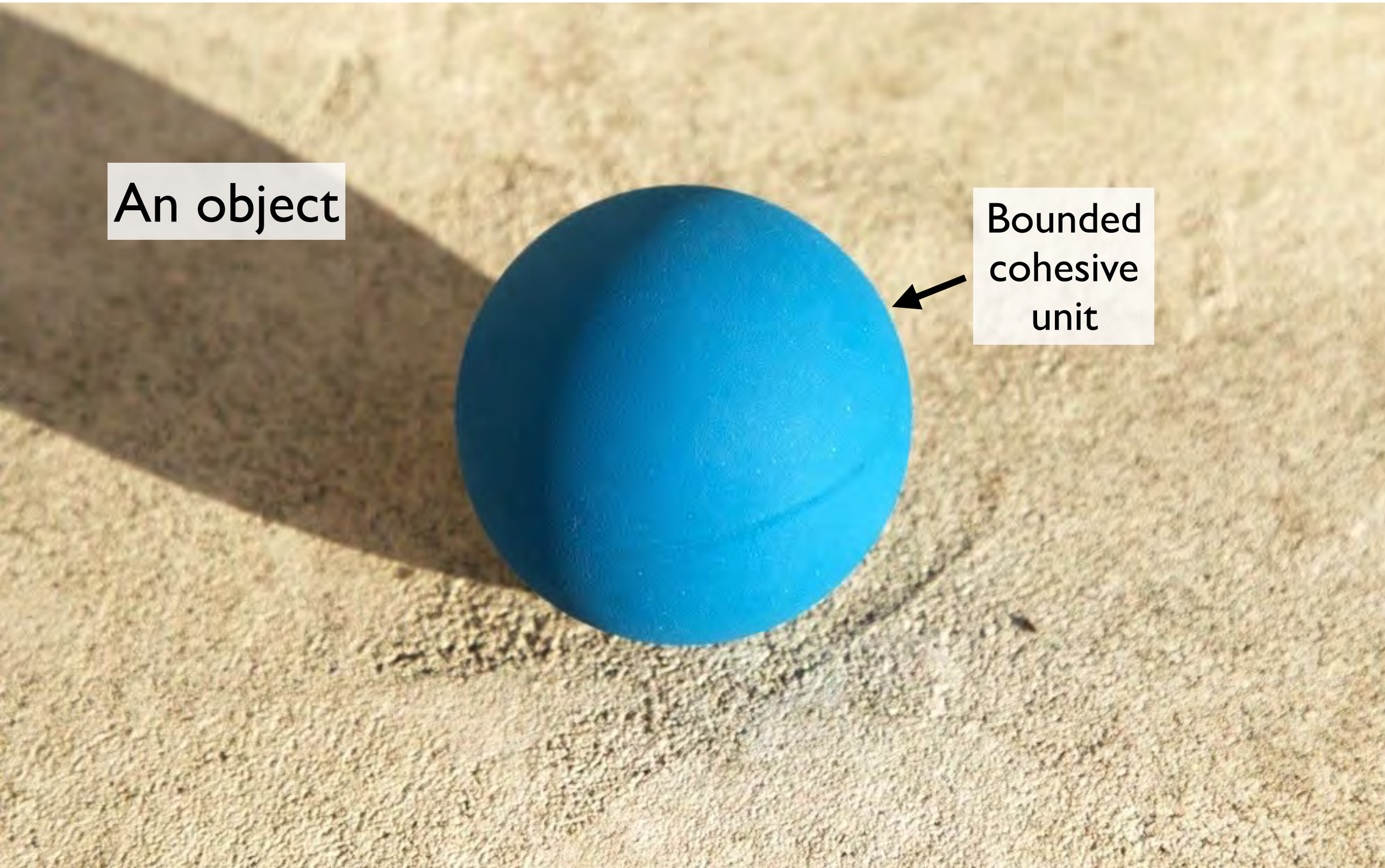
Questions for maps:
What is your purpose?
What simplifications were knowingly made in your creation?
How accurately do you represent your territory?
How effectively do you serve your purpose?



Two Uses For "System"

- "System-as-label" – used as part of a label for a territory
- "System-as-model" – used to "map" that territory

What Isn't A System?



Objects vs. Systems

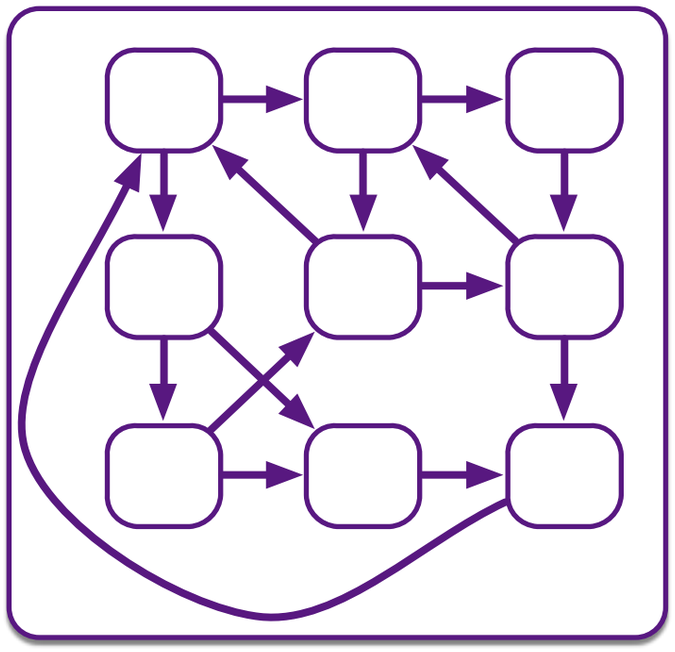
	Objects	Systems
Used as labels	yes	yes

Objects vs. Systems

	Objects	Systems
Used as labels	yes	yes
Focus of interest	boundary	inside the boundary
Physical	yes	not necessarily
Cohesive in space	yes	not necessarily
Range of choice in definition	small	large

Object Permanence

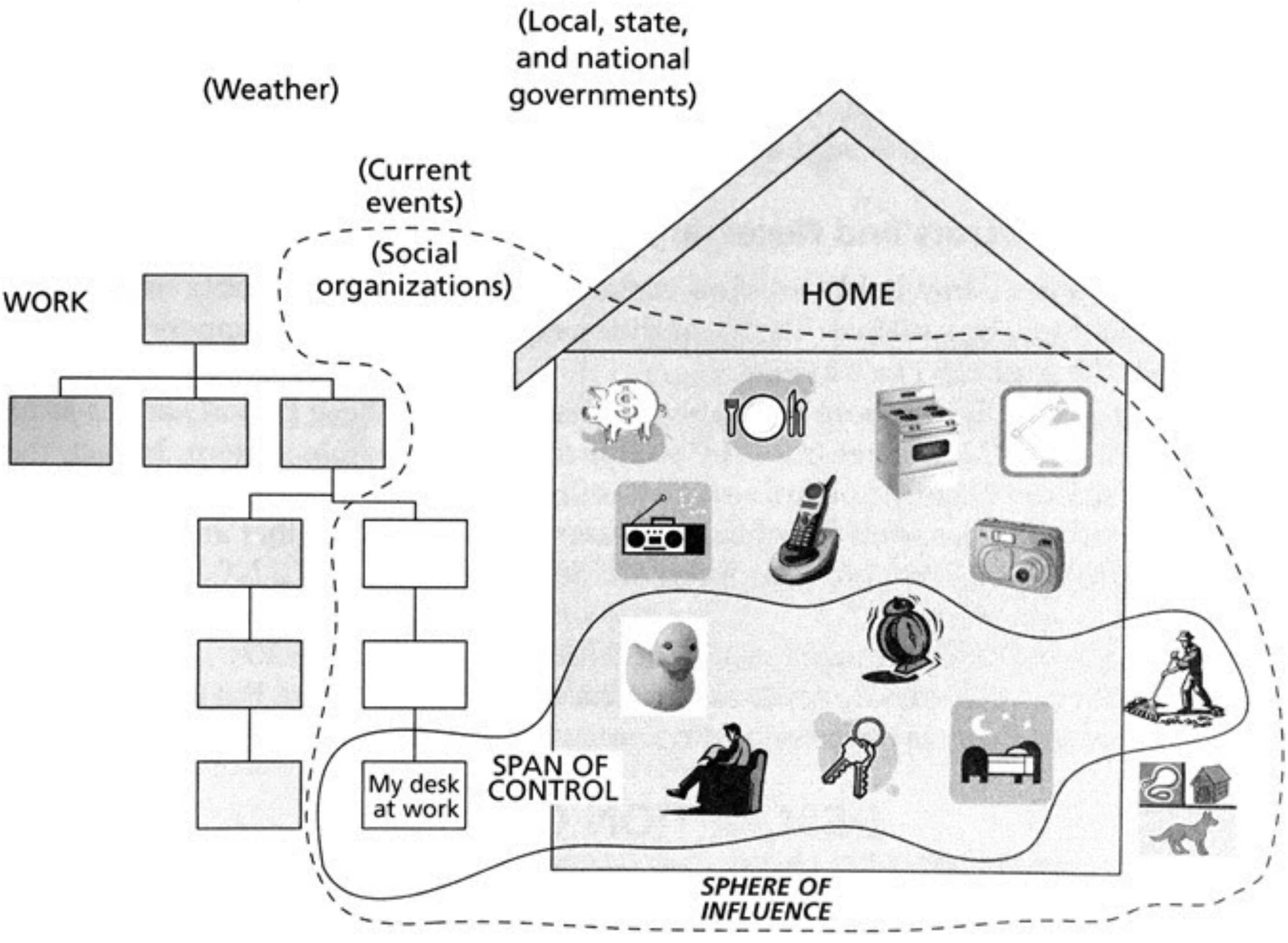
Definition: A System …



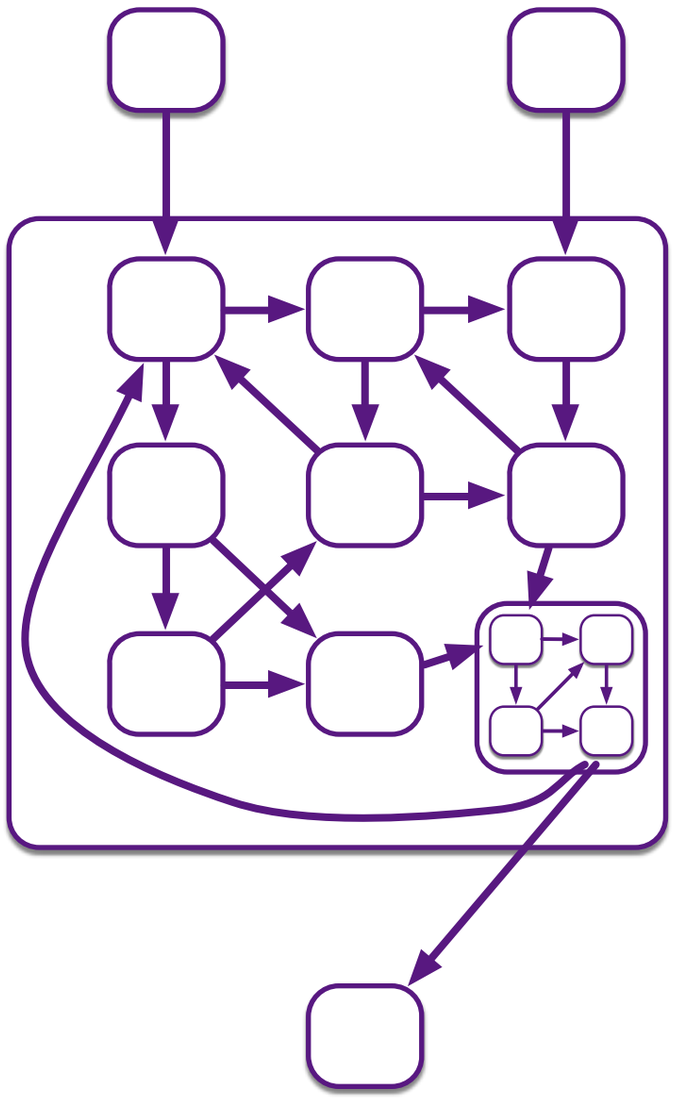
- is a **model** made up of interdependent **parts**
- has a **boundary** defined by its parts and a **context** outside that boundary

Context

Boundaries


(Local, state, and national governments)
(Weather)
(Current events)
(Social organizations)
WORK
HOME
My desk at work
SPAN OF CONTROL
SPHERE OF INFLUENCE

Definition: A System …



Context

- is a **model** made up of interdependent **parts**
- has a **boundary** defined by its parts and a **context** outside that boundary
- can have **connections** that reach across its boundary
- can be part of a larger system and can have **sub-systems** within it [**nesting**]

Next Evolution: A System …

- is an **interface** between us and the world that uses our **whole brain** to bring **useful order** to the overwhelming complexity of reality without oversimplifying
- has three primary aspects:
  - ✳ **diagram(s)** that show the overall structure of parts and connections [visual]
  - ✳ **descriptions** of the various parts and connections [linguistic]
  - ✳ **dynamics** that model how the parts and their interactions change over time [kinesthetic]

System As Interface