



SST-11 Viability, Needs and Causal Inputs



A plant stands rooted in the soil, its leaves turned toward the light. Each day, it depends on sunlight, water, and nutrients to continue growing. When water is available, it is absorbed through the roots and transported through the plant, sustaining its structure and enabling it to flourish. But when water is scarce, the leaves begin to wilt, growth slows, and the plant's continued existence is put at risk. Now consider a person sitting down to eat after a long day. The food they consume restores energy, supports bodily processes, and enables them to continue their activities. Without regular nourishment, their strength declines, concentration falters, and even simple tasks become difficult. In both cases, survival depends on access to essential inputs. The plant must receive water and sunlight; the person must obtain food. These are not optional extras but conditions that must be satisfied for the continuation of life. If these inputs are available, the system persists. If they are not, it begins to fail.

This pattern extends far beyond these simple examples. Animals must find food, businesses must generate revenue, and societies must secure energy and resources. In every case, something must be maintained for the system to continue, and failure to secure these essential inputs places its viability at risk.

Formal Description

Viability is the capacity of a system to persist and/or proliferate through the continuation of its organisation.

Needs arise when viability depends on ongoing causal inputs required to sustain viability-maintaining processes.

Satisfiers are a process-maintaining causal inputs that contribute to the persistence or proliferation of a system.

Contra-satisfiers are process-inhibiting causal inputs that degrade, destabilise, or prevent the persistence or proliferation of a system).

Systems persist only insofar as they regulate access to satisfiers and limit exposure to contra-satisfiers.



Plain English Explanation

All systems need certain things to keep going.

- A plant needs sunlight and water
- An animal needs food and oxygen
- A person needs resources, relationships, and knowledge
- A society needs energy, organisation, and cooperation

When a system depends on something like this, we call it a **need**.

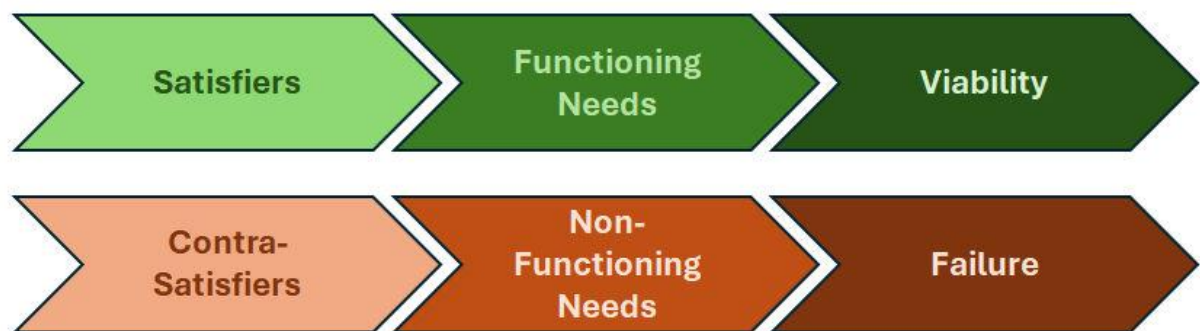
The things that meet those needs are called **satisfiers**.

The things that harm or prevent those needs being met are called **contra-satisfiers**.

The key idea is simple:

- Systems survive by getting what they need
- Systems fail when they cannot

Everything else, e.g., behaviour, organisation, decision-making, follows from this.



Example 1 (Biological)

A human body needs oxygen.

- Oxygen = satisfier
- Poison = contra-satisfier

Without oxygen, viability is lost within minutes.

Example 2 (Economic)

A business needs revenue.

- Customers = satisfiers
- Theft or shoplifting = contra-satisfier

Without revenue, the business cannot persist.

Example 3 (Social)

A society needs stable access to energy.

- Energy supply = satisfier
- Disruption to supply = contra-satisfier

Failure leads to instability or collapse.



Provenance and Links

This module draws on several strands of thought:

- Evolutionary and biological perspectives on survival and adaptation, beginning with Charles Darwin.
- Systems theory, particularly Ludwig von Bertalanffy, which emphasises that systems must maintain themselves through exchanges with their environment.
- Motivational theory, including Clayton Alderfer, which identifies different classes of human needs.
- Human needs and satisfiers, particularly the work of Manfred Max-Neef, who distinguished between universal human needs and the diverse satisfiers that may fulfil them. His concept of synergistic, inhibiting, and pseudo-satisfiers aligns closely with the distinction between satisfiers and contra-satisfiers used in this framework.
- Sociological and systems approaches that recognise the role of resources, constraints, and feedback in shaping behaviour, including Margaret Archer.

This module integrates these perspectives within a general framework in which needs arise from the requirement to sustain viability, and behaviour is shaped by access to satisfiers and exposure to contra-satisfiers.

Practical Exercise – Student Response Area

Choose one system, e.g., yourself, a business, a school, a country.

Answer the following:

1. What are its key needs?
2. What are the main satisfiers that meet those needs?
3. What are the main contra-satisfiers that threaten them?

👉 Write a short paragraph (6–8 sentences).