



GST 41 – Systems Linguistics and the Systems Idiom

Formal Description

Systems linguistics is the systematic study of how systems structures are represented within language and other symbolic forms, including the linguistic structures through which entities, processes, transfers, constraints, feedbacks, and other causal relationships are expressed.

A **systems idiom** is a shared vocabulary of systems concepts used to represent and compare systems structures across different domains. The present systems idiom supports comparison at the level of identified systems concepts and structures. Further development of systems linguistics may permit deeper comparison of the structural and grammatical forms through which causal relationships are expressed.

Plain English Explanation

Systems linguistics and the systems idiom are related, but they are not the same thing.

The **systems idiom** is the practical tool we can use now. It provides shared concepts such as:

- entities;
- processes;
- transfers;
- constraints;
- feedbacks;
- functions;
- environments;
- emergence.

These concepts help us describe ideas from different disciplines in a common way. For example, an economist may speak of markets and prices, a sociologist of institutions and norms, and a psychologist of cognition and motivation. Using a systems idiom, we can ask what entities, processes, transfers, constraints, and feedbacks each perspective describes.

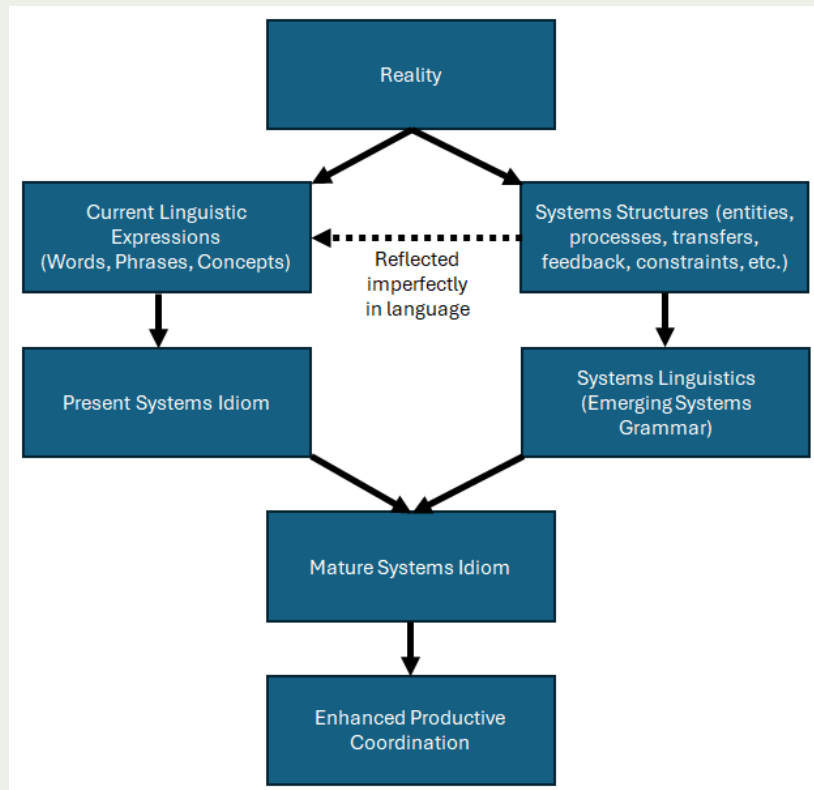
This allows useful comparison, but it has an important limitation. We are mainly comparing **words, concepts, and identified systems structures**. We do not yet have a fully developed systems grammar that allows propositions from different disciplines to be translated into standardised and grammatically comparable systems propositions.

Systems linguistics is the emerging field of research concerned with this deeper problem.

Language may reflect structures that also exist in systems. Nouns often identify entities. Verbs often describe processes. Simple subject–verb–object statements may represent causal relationships between entities and processes. Other linguistic structures may similarly reflect transfers, constraints, feedbacks, and levels of organisation.

If these relationships can be identified more systematically, systems linguistics may help reveal the deeper systems structures embedded within disciplinary languages. A more developed systems linguistics could therefore support the development of a more mature systems idiom. Instead of comparing only lists of identified systems concepts, it may eventually become possible to compare systems propositions with more similar structural and grammatical forms.

This remains a research challenge. Productive co-ordination can already support useful comparison, but further development of systems linguistics may allow deeper and more reliable structural comparison in the future.



Example 1 – Nouns and Entities

Different disciplines use different nouns. An economist may refer to a *market*. A sociologist may refer to an *institution*. A biologist may refer to an *organism*.

These words have different disciplinary meanings, but each identifies something distinguishable that may be treated as an entity within a systems analysis.

The systems idiom therefore provides a common concept—*entity*—through which these different disciplinary terms can begin to be compared.

Systems linguistics asks a deeper question: Why and how does language identify distinguishable systems entities through linguistic structures such as nouns and noun phrases?

Example 2 – Subject, Verb and Object

Consider the statement: **Prices influence consumer behaviour.**

The grammatical structure identifies a subject, an action or relationship, and an object.

In systems terms, the statement also appears to describe a causal structure in which one process or state influences another.

A different discipline may express a related causal structure using very different terminology.

The present systems idiom can identify the entities, processes, transfers, and constraints involved. A more developed systems linguistics might also help identify and compare the deeper linguistic structures through which the causal relationships themselves are represented.



Provenance and Links

The development of systems linguistics draws upon work in systems science, linguistics, cognition, and theories of representation.

Relevant contributors include:

- **Ludwig von Bertalanffy** – General Systems Theory and the search for common structures across disciplinary domains.
- **Kenneth E. Boulding** – the need for communication between specialised disciplines and the development of shared systems concepts.
- **Noam Chomsky** – the distinction between surface linguistic expressions and deeper grammatical structures.
- **Jerome Bruner** – modes of representation and the relationship between cognition, symbolic representation, and understanding.
- **Claude Shannon** – information, communication, and the representation of information through symbolic systems.

The distinction between systems linguistics and the systems idiom, and its application to productive co-ordination, is developed in *Systems Linguistics: Representation, Compression and Productive Co-ordination* and *Productive Co-ordination* (Challoner, 2026).

Practical Exercise

Choose a simple causal statement from a subject or profession with which you are familiar. For example: **Higher prices reduce demand.**

Identify:

1. The nouns or noun phrases.
2. The verbs or causal relationships.
3. The entities represented.
4. The processes involved.
5. Any transfers, constraints, or feedbacks that may be implied but not directly stated.

Now consider: Does the grammatical structure of the statement appear to reflect its underlying systems structure?

What information about the system is explicit in the sentence, and what information remains hidden or compressed?