



## GST 64 – Progressive Organisation

### Formal Description

Progressive organisation is the gradual increase in the degree of causal organisation exhibited by a collection of interacting entities. It may be viewed from two complementary perspectives. The developmental perspective describes how a particular collection becomes increasingly organised through time. The organisational perspective compares different collections according to their present degree of causal organisation. As causal organisation increases, new emergent properties, behaviours or outputs may arise, enabling the formation and development of systems.

### Plain English Explanation

Organisation is rarely something that simply appears. Instead, it usually develops gradually as interactions between components become increasingly coordinated. This gradual increase in causal organisation is called progressive organisation.

Progressive organisation can be understood from two complementary perspectives.

The first is the developmental perspective. Here we follow the same collection of entities through time as its organisation increases. Imagine the construction of a bridge. The individual components are first brought together into an assembly. As construction continues, more components become connected and their interactions become increasingly organised. Eventually, the completed bridge acquires new capabilities, such as supporting traffic and resisting environmental forces. These emergent capabilities mark its transition into a functioning system.

The second is the organisational perspective. Instead of following one collection through time, we compare different collections according to their present degree of organisation. A simple collection possesses the lowest degree of organisation. A configuration is more organised because the arrangement of its components has become significant. An assembly exhibits a higher degree of organisation because causal interactions exist between its components. A pre-systemic assembly exhibits still greater organisation because these interactions have become increasingly coordinated. Finally, a system represents the highest level because its causal organisation generates stable emergent properties, behaviours or outputs.

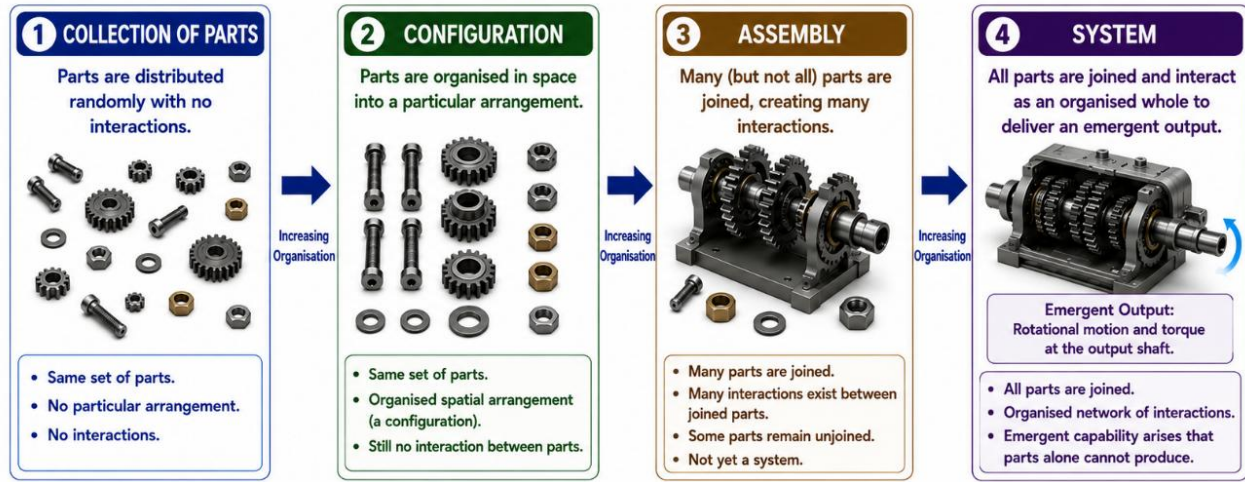
These two perspectives describe the same underlying principle. The developmental perspective explains how organisation increases, while the organisational perspective describes how much organisation currently exists.

Progressive organisation is found throughout nature and society. A fertilised egg develops into a complex organism through increasing causal organisation. A newly formed business gradually develops communication, procedures and cooperation before becoming an effective organisation. Some assemblies continue to become more organised until new emergent capabilities arise. Others fail to do so and never become functioning systems.

Understanding progressive organisation helps explain how systems form, develop, adapt and sometimes fail. It also provides a way of recognising different levels of organisation without assuming that every organised collection is necessarily a system.



## COLLECTIONS, CONFIGURATIONS, ASSEMBLIES AND SYSTEMS: A PROGRESSION



A system emerges when organisation generates new emergent capabilities (not possible by the parts, configurations or assemblies alone).



### KEY POINT

Collection → Configuration → Assembly → System represents increasing organisation.  
Assemblies have interactions; systems have organised interactions that produce emergent outputs.

### Examples

During the construction of a bridge, the same collection of components passes progressively from an assembly to a functioning system. This illustrates the developmental perspective.

If we compare a pile of bricks, a stack of partially assembled wall sections, a roofed building under construction and a completed bridge, we are comparing different examples according to their present degree of organisation. This illustrates the organisational perspective.

### Provenance and Links

The idea that organisation develops progressively appears in developmental biology, engineering, organisational science and systems theory. Many disciplines recognise that increasing coordination between interacting components gives rise to new capabilities. General Systems Theory extends this idea by recognising both the developmental progression of organisation through time and the comparison of different collections according to their current degree of causal organisation. This provides a unified framework for understanding system formation and levels of organisation.



**Practical Exercise**

Choose a familiar example such as a building project, a biological organism, a business or a community organisation.

First, describe how it develops from a collection of components into a functioning system, identifying the major stages of progressive organisation.

Next, compare each stage according to its present degree of organisation. Explain why each stage represents a higher level of causal organisation than the previous one.

Finally, identify the point at which you believe stable emergent properties first appear and explain why this marks the transition from a pre-systemic assembly to a system.