# The Systems Archetypes[1]

As a group, systems archetypes make up one of the 10 tools of systems thinking. The archetypes capture common "stories" that recur in different settings. They're valuable because they let you dig below the surface-level, distracting details of a complex situation to see the underlying systemic structure that drives a situation. Often, problems or issues that may seem unique at first can turn out to be caused by the same systemic structure, and therefore can be captured in the same systems archetype. The table below describes eight common archetypes and depicts their characteristic causal loop structures.

Drifting Goals

The "Drifting Goals" archetype states that a gap between a goal and an actual condition can be resolved in two ways: by taking corrective action to achieve the goal, or by lowering the goal. It hypothesizes that when there is a gap between the goal and the actual condition, the goal is lowered to close the gap. Over time, the continual lowering of the goal will lead to gradually deteriorating performance.
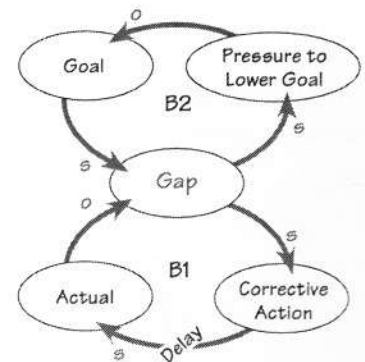
Escalation

The "Escalation" archetype occurs when one party's actions are perceived by another party to be a threat, and the second party responds in a similar manner, further increasing the threat. The archetype hypothesizes that the two balancing loops will create a reinforcing figure-8 effect, resulting in threatening actions by both parties that grow exponentially over time.
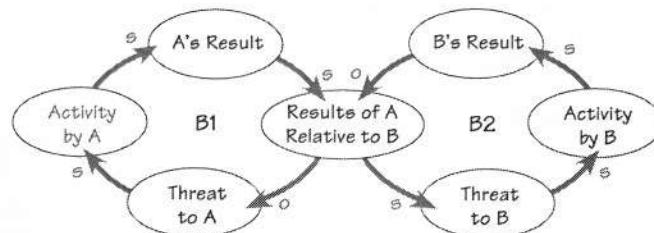

1. The systems archetypes were first described in *The Fifth Discipline: The Art and Practice of the Learning Organization*, by Peter Senge (Doubleday, 1990). The material in this appendix was also treated in a number of issues of The Systems Thinker newsletter (Pegasus Communications, Inc.).

Fixes That Fail

The "Fixes That Fail" archetype states that a "quick-fix" solution can have unintended consequences that exacerbate the problem. It hypothesizes that the problem symptom will diminish for a short while and then return to its previous level, or become even worse over time.

Growth and Underinvestment

The "Growth and Underinvestment" archetype applies when growth approaches a limit that can be overcome if capacity investments are made. If a system becomes stretched beyond its limit, however, it will compensate by lowering performance standards, which reduces the perceived need for capacity investments. This reduction also leads to lower performance, which further justifies underinvestment over time.

Limits to Success

The "Limits to Success" archetype states that a reinforcing process of accelerating growth (or expansion) will encounter a balancing process as the limit of that system is approached. The archetype hypothesizes that continuing efforts will produce diminishing returns as one approaches the limit.

Shifting the Burden

The "Shifting the Burden" archetype states that a problem symptom can be resolved either by using a symptomatic solution or applying a fundamental solution. The archetype hypothesizes that once a symptomatic solution is used, it alleviates the problem symptom and reduces pressure to implement a more fundamental solution. The symptomatic solution also produces a side effect that systematically undermines the ability to develop a fundamental solution or capability.
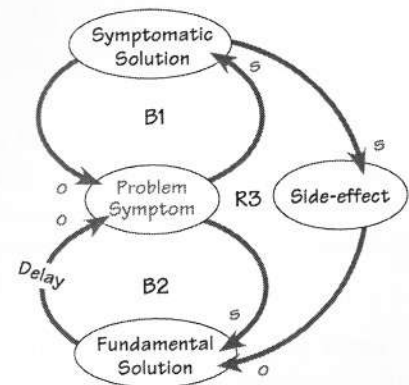
Success to the Successful

The "Success to the Successful" archetype states that if one person or group (A) is given more resources than another equally capable group (B), A has a higher likelihood of succeeding. The archetype hypothesizes that A's initial success justifies devoting more resources to A, further widening the performance gap between the two groups over time.
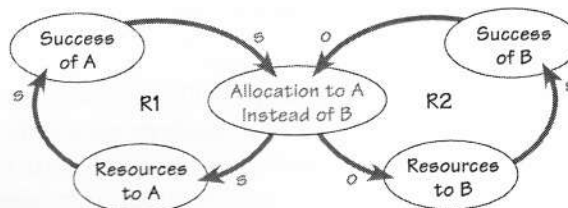
Tragedy of the Commons

The "Tragedy of the Commons" archetype identifies the causal connections between individual actions and the collective results (in a closed system). It hypothesizes that if the total usage of a common resource becomes too great for the system to support, the commons will become overloaded or depleted, and everyone will experience diminishing benefits.