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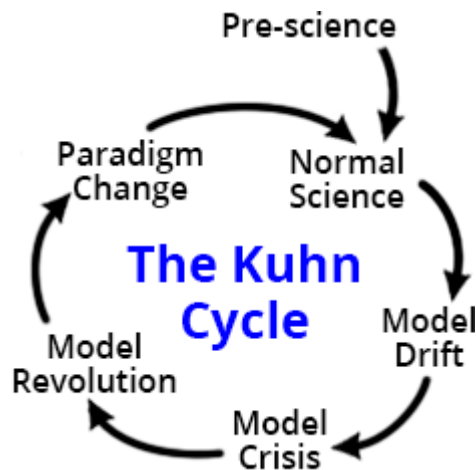
Finding and Resolving the Root Causes of the Sustainability Problem

CT.org continues to be interested in the methods and processes of other disciplines, believing they have application to community planning and the social sciences. In this case, J. Gerry Purdy, Ph.D. [gerry.purdy@mobilocity.biz] offers the Kuhn Cycle as a way to look at how progress is made; how progress is made through revolutionary change rather than evolutionary. The usefulness of this to community planning seems to be that paradigm shifts in cities must happen suddenly to have an effect. Waiting for gradual change is unlikely to be successful. Something to consider when facing a stagnate and undesirable civic situation; dramatic action, yet responsible dramatic action, may prove best. Hopefully you will find Thomas Kuhn’s work will be helpful.

The Kuhn Cycle

LINK:

<https://www.thwink.org/sustain/glossary/KuhnCycle.htm#:~:text=The%20Kuhn%20Cycle%20is%20a,the%20accumulation%20of%20new%20ideas>.



About

Description

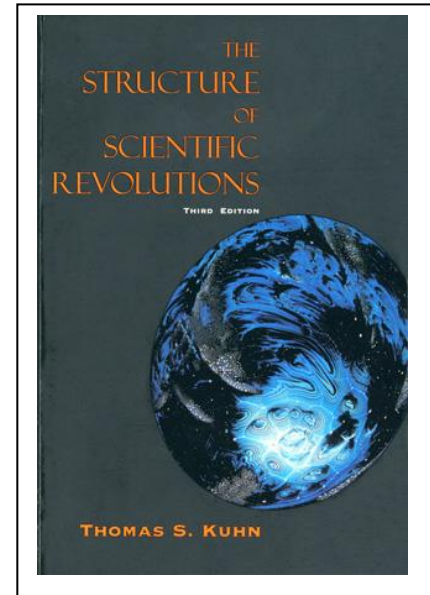
Thomas Samuel Kuhn was an American philosopher of science whose 1962 book *The Structure of Scientific Revolutions* was influential in both academic and popular circles, introducing the term paradigm shift, which has since become an English-language idiom. [Wikipedia](#)
Born: July 18, 1922, [Cincinnati, OH](#)
Died: June 17, 1996, [Cambridge, MA](#)



Click a node to read about it.

The **Kuhn Cycle** is a simple cycle of progress described by Thomas Kuhn in 1962 in his seminal work *The Structure of Scientific Revolutions*.

In *Structure* Kuhn challenged the world's current conception of science, which was that it was a steady progression of the accumulation of new ideas. In a brilliant series of reviews of past major scientific advances, Kuhn showed this viewpoint was wrong. Science advanced the most by occasional revolutionary explosions of new knowledge, each revolution triggered by introduction of new ways of thought so large they must be called new paradigms. From Kuhn's work came the popular use of terms like "paradigm," "paradigm shift," and "paradigm change."



The Kuhn Cycle is preceded by the Pre-science step. After that the cycle consists of the five steps as shown. The Model Drift step was added to clarify the cycle and allow reuse of the Model Drift concept in the [System Improvement Process](#).

Kuhn's hypothesis that big progress comes from revolutionary breakthroughs has an equivalent in the life sciences, as we can see in this extract from Wikipedia:

Punctuated equilibrium ... is a theory in evolutionary biology which proposes that most species will exhibit little net evolutionary change for most of their geological history, remaining in an extended state called *stasis*. When significant evolutionary change occurs, the theory proposes that it is generally restricted to rare and geologically rapid events of branching speciation....

Punctuated equilibrium is commonly contrasted against the theory of phyletic gradualism, which states that evolution generally occurs uniformly and by the steady and gradual transformation of whole lineages (called anagenesis). In this view, evolution is seen as generally smooth and continuous.

Thomas Kuhn defined ***paradigms*** as "universally recognized scientific achievements that, for a time, provide model problems and solutions for a community of researchers," (page X of the 1996 edition).

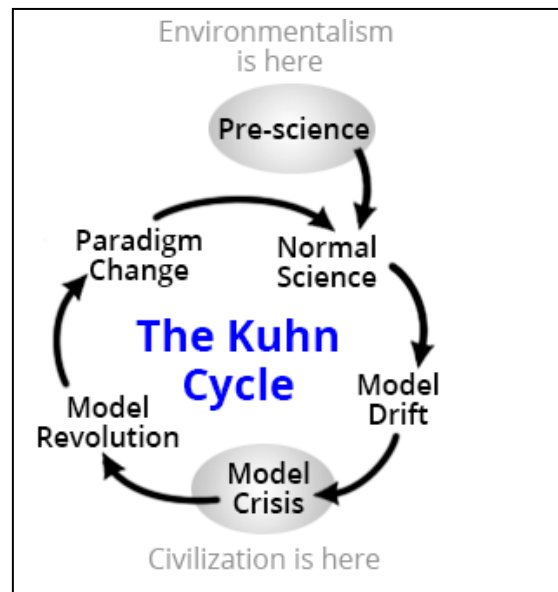
A **paradigm** describes:

- What is to be observed and scrutinized.
- The kind of questions that are supposed to be asked and probed for answers in relation to this subject.
- How these questions are to be structured.
- How the results of scientific investigations should be interpreted.

In short, a **paradigm** is a comprehensive model of understanding that provides a field's members with viewpoints and rules on how to look at the field's problems and how to solve them. "Paradigms gain their status because they are more successful than their competitors in solving a few problems that the group of practitioners has come to recognize as acute." (page 23)

The global environmental sustainability problem is so large, complex, novel, urgent, and its solution so difficult that solving the problem entails creation of a new paradigm. Just conceiving of the problem requires a fundamentally new way of thinking. Before *The Limits to Growth* defined the problem in 1972, there was little realization that human system growth could not be infinite. So called "progress" cannot go on forever. The environment cannot be tamed and subjugated, as mankind has done before

to everything else that stood in the way of "progress." Environmentalism finds itself in the **Pre-science** step of the Kuhn Cycle. It lacks a valid paradigm for solving its central problem of sustainability. Yet the field's members are assuming they are in the **Normal Science** step, where a field has a paradigm that works well enough for that field to be called a bona fide science. This is a grave error.



READ THE REST OF THE STORY AT:

<https://www.thwink.org/sustain/glossary/KuhnCycle.htm#:~:text=The%20Kuhn%20Cycle%20is%20a,the%20accumulation%20of%20new%20ideas.>