

# Order

All ‘whole-parts’ in ‘space-time’ have substance and form. The substance is ‘**matter-energy**’, and form is the ‘**order**’. **Order** is relationship—the pattern, organization and form of that ‘matter-energy’.

**Jules Henri Poincaré** explained in 1908:

“Science is built up of facts, as a house is with stones. But a collection of facts is no more a science than a heap of stones is a house.”

It is the **order**, pattern, organization, form and relationship of the facts that make a science; and the **order**, pattern, organization, form and relationship of the stones that make a house.

An understanding of this concept of **order**—pattern, organization, form and relationship; and its compliment concept **disorder**—patternlessness, disorganization, formlessness; and relationshiplessness that is essential to a full understanding Universe.

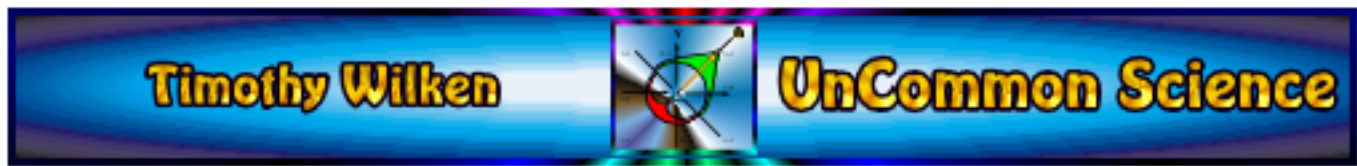
## *Pattern Integrity*

Understanding order begins with understanding pattern. R. Buckminster Fuller has added greatly to our understanding of pattern. His most comprehensive explanation of pattern is found in ***Synergetics***<sup>1</sup>.

However, Fuller’s language is not immediately accessible to many readers new to his works, fortunately a student of Fuller’s has come to our aid.

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<sup>1</sup> **R. Buckminster Fuller**, *SYNERGETICS—Explorations in the Geometry of Thinking*, Volumes I & II, New York, Macmillan Publishing Co, 1975, 1979



Amy C. Edmondson has written an introductory text<sup>2</sup> to Fuller's *Synergetics* with the specific purpose of making Fuller's science more accessible to new readers. When she uses quotations from *Synergetics*, it is with careful reference to the specific sections and paragraphs within Fuller's text.

**Amy Edmondson** explains:

"The term "pattern integrity" is a product of Fuller's lifelong commitment to vocabulary suitable for describing Scenario Universe. He explains,

"When we speak of pattern integrities, we refer to generalized patterns of conceptuality gleaned sensorially from a plurality of special-case pattern experiences... . In a comprehensive view of nature, the physical world is seen as a patterning of patternings... (505.01-4)

"Let's start with his own simplest illustration. Tie a knot in a piece of nylon rope. An "overhand knot," as the simplest possible knot, is a good starting point. Hold both ends of the rope and make a loop by crossing one end over the other, tracing a full circle (360 degrees). Then pick up the end that lies underneath, and go in through the opening to link a second loop with the first (another 360-degree turn). The procedure applies a set of instructions to a piece of material, and a pattern thereby becomes visible.

"What if we had applied the same instructions to a segment of manila rope instead? Or a shoelace? Or even a piece of cooked spaghetti? We would still create an overhand knot. The procedure does not need to specify material. "A pattern has an integrity independent of the medium by virtue of which you have received the information that it exists" (505.201). The knot isn't that little bundle that we can see and touch, it's a weightless design, made visible by the rope.

"The overhand-knot pattern has integrity: once tied, it stays put. In contrast, consider directions that specify going around once (360 degrees), simply making a loop. This pattern quickly disappears with the slightest provocation;

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<sup>2</sup> **Amy C. Edmondson**, *A Fuller Explanation: The Synergetic Geometry of R. Buckminster Fuller*, Van Nostrand Reinhold, New York, 1987



it is not a pattern integrity. (Even though the overhand knot depends on friction to maintain its existence, a single loop will not be a stable pattern no matter how smooth or coarse the rope.) Notice that it requires a minimum of two full circles to create a pattern integrity.  $2 \times 360 = 720$  degrees, the same as the sum of the surface angles of the tetrahedron (four triangles yield  $4 \times 180$  degrees). Minimum system, minimum knot, 720 degrees. A curious coincidence? Synergetics is full of such coincidences.

"A similar example involves dropping a stone into a tank of water. "The stone does not penetrate the water molecules," Fuller explains in *Synergetics*, but rather "jostles the molecules," which in turn "jostle their neighboring molecules" and so on. The scattered jostling, appearing chaotic in any one spot, produces a precisely organized cumulative reaction: perfect waves emanating in concentric circles.

"Identical waves would be produced by dropping a stone in a tank full of milk or kerosene (or any liquid of similar viscosity). A wave is not liquid; it is an event, reliably predicted by initial conditions. The water will not surprise us and suddenly break out into triangular craters. As the liquid's molecular array is rearranged by an outside disturbance, all-embracing space permeates the experience. Because liquids are by definition almost incompressible, they cannot react to an applied force by contracting and expanding; rather, the water must move around. In short, the impact of any force is quickly distributed, creating the specific pattern shaped by the interaction of space's inherent constraints with the characteristics of liquid.

"The concept thus introduced, Bucky goes on to the most important and misunderstood of all pattern integrities: life. "What is really important... about you or me is the thinkable you or the thinkable me, the abstract metaphysical you or me, ... what communications we have made with one another" (801.23). Every human being is a unique pattern integrity, temporarily given shape by flesh, as is the knot by rope.

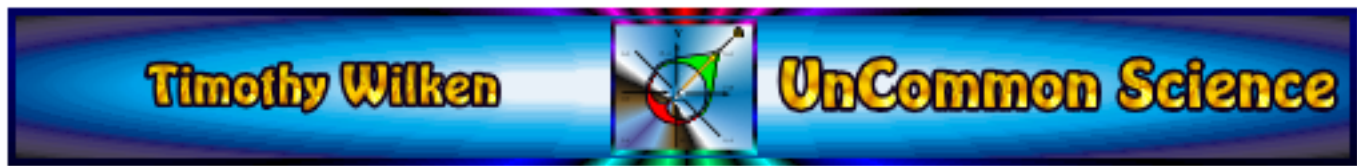
"... All you see is a little of my pink face and hands and my shoes and clothing, and you can't see me, which is entirely the thinking, abstract, metaphysical me. It becomes shocking to think that we recognize one another only as the touchable, nonthinking biological organism and its clothed ensemble. (801.23)



“Our bodies are physical, but life is metaphysical. Housed in a temporary arrangement of energy as cells, life is a pattern integrity far more complex than the knot or the wave. Remember that all the material present in the cells of your body seven years ago has been completely replaced today, somehow showing up with the same arrangement, color, and function. It doesn't matter whether you ate bananas or tuna fish for lunch. A human being processes thousands of tons of food, air, and water in a lifetime. Just as a slip knot tied in a segment of cotton rope, which is spliced to a piece of nylon rope, in turn spliced to manila rope, then to Dacron rope (and so on) can be slid along the rope from material to material without changing its "pattern integrity," we too slide along the diverse strands supplied by Universe—as "self-rebuilding, beautifully designed pattern integrities." No weight is lost at the moment of death. Whatever "life" is, it's not physical.

“The key is consciousness. "Mozart will always be there to any who hears his music." Likewise, "when we say 'atom' or think 'atom' we are... with livingly thinkable Democritus who first conceived and named the invisible phenomenon 'atom'" (801.23). Life is made of awareness and thought, not flesh and blood. Each human being embodies a unique pattern integrity, evolving with every experience and thought. The total pattern of an individual's life is inconceivably complex and ultimately eternal. No human being could ever completely describe such a pattern, as he can the overhand knot; that capability is relegated to the "Greater Intellectual Integrity of Eternally Regenerative Universe." (2)

“If we seem to stray from the subject of mathematics, resist the temptation to categorize rigidly. Synergetics does not stop with geometry. Fuller was deeply impressed by a definition in a 1951 Massachusetts Institute of Technology catalog, which read "Mathematics is the science of structure and pattern in general" (606.01): not games with numbers and equations, but the tools for systematic analysis of reality. To Fuller this meant that mathematics ought to enable the "comprehensivist" to see the underlying similarities between superficially disparate phenomena, which might be missed by the specialist. Rope may not be much like water, but the knot is like the wave—is like the tetrahedron.”<sup>3</sup>



## R. Buckminster Fuller<sup>1975</sup> explains:

“Imagine yourselves in terms of a moving-picture scenario. You’ve all seen moving pictures run backwards, where people undive out of the swimming pool back onto the board. I’m going to run a moving picture of you backwards. You’ve just had breakfast; now, I’m going to run the picture backwards, and all the food comes out of your mouth onto the plate; and the plates go back up onto the serving tray and things go back into the stove, back into the icebox; they come out of the icebox and into the cans, and they go back to the store; and then, from the store they go back to the wholesaler; then they go back to the factories where they’ve been put together; then they go back to the trucks and ships; and they finally get back to pineapples in Hawaii. Then the pineapples separate out, go back into the air; the raindrops go back into the sky, and so forth.

“But in the very fast accelerated reversal of a month practically everything has come together that you now have on board you, gradually becoming your hair and your skin and so forth, whereas a month ago, it was some air coming over the mountains. In other words, you get completely deployed. I want you to begin to think of yourselves in an interesting way as each one of these.

“If we had some way of putting tracers on the pictures, you would see chemical elements gradually getting closer and closer together, and, finally, getting into those various vegetable places and into roasts and, tighter and tighter, into cans, into the store, finally getting to just being you or me—temporarily, becoming my hair, my ear, some part of my skin—and then that breaks up and goes off and gets blown around as dust.

“Each of us is a very complex **pattern integrity** with which we were born.”<sup>4</sup>

Our human bodies are constantly being torn down and rebuilt. The ‘order’ of our bodies is the result of what Fuller calls the **pattern integrity**. The design for this pattern integrity is contained within our DNA. Our DNA holds the blueprint for the

<sup>3</sup> **Amy C. Edmondson**, *A Fuller Explanation: The Synergetic Geometry of R. Buckminster Fuller*, Van Nostrand Reinhold, New York, 1987

<sup>4</sup> **R. Buckminster Fuller** *BUCKMINSTER FULLER—An Autobiographical Monologue/Scenario*, St. Martin’s Press, New York, 1980





manufacture and remanufacture of our bodies, and this process is a continuing one that never stops from conception until death. It is **process** that allows for growth and repair of injuries as well as recovery from illnesses.

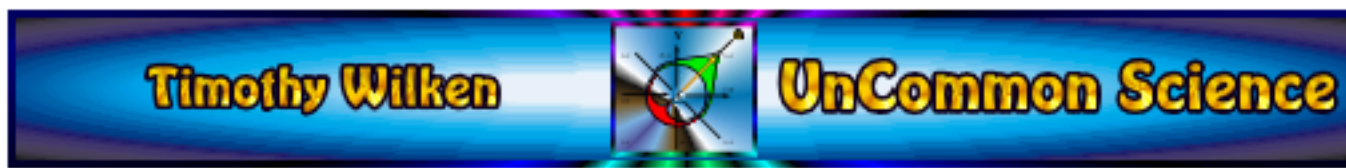
Within in any ‘whole-part’ order can be increasing—increasing order is called **syntropy**, Or, within in any ‘whole-part’ order can be decreasing—decreasing order is called **entropy**. Or, within in any ‘whole-part’ order can be stagnant—order that is not changing is called **atropy**. Syntropy, entropy, and atropy are encountered in Universe as the result of synergy, adversity, and neutrality.

Scientists first encountered **entropy**—decreasing order—in their study of the simpler stages of process—light, particles, atoms, and small molecules

“In 1824 the French military engineer **Sadi Carnot** introduced the concept of the heat-engine cycle and the principle of reversibility, both of which greatly influenced the development of the science of thermodynamics. Carnot’s work concerned the limitations on the maximum amount of work that can be obtained from a steam engine operating with a high-temperature heat transfer as its driving force. Later that century, his ideas were developed by **Rudolf Clausius**<sup>1850</sup>, a German mathematician and physicist, into the **Second Law of Thermodynamics**, which introduced the concept of **Entropy**. Ultimately, the second law states that every process that occurs in nature is irreversible and unidirectional, with that direction being dictated by an overall increase in entropy. It, together with the first law, forms the basis of the science of classical thermodynamics.”<sup>5</sup>

The Second Law of Thermodynamics states that in any **closed** system, no process can occur that increases the net order (or decreases the net entropy) of the system. The Second Law of Thermodynamics assumes that the universe in its entirety is a closed system. The universe is heterogeneous—some regions within the universe are very hot (stars), and some regions within the universe are very cold (open space). The Second Law of Thermodynamics tells us the hot regions are steadily cooling down, and the cold regions are steadily warming up. The universe as a whole will reach a state of thermodynamic equilibrium when everything in the universe is the same temperature. At this point, all physical-chemical reactions will stop. This is the state

<sup>5</sup> **Thermodynamics**, *ENCYCLOPÆDIA BRITANNICA*, [www.britannica.com](http://www.britannica.com), 2000



of **maximum entropy**. This state of complete randomness and homogeneity without any order, structure, or pattern is known as the **heat death** of the universe.

However, Thermodynamics distinguishes between open and closed systems. A closed system is isolated from the rest of the environment and exchanges neither matter-energy or information with its surroundings. An open system is one in which exchanges do occur, exchanges of matter-energy and information. Living systems are open systems. Living systems are clearly ordered. Living systems can be seen as localized regions in 'space-time' where there is a continuous increase in order.

Erwin Schrödinger first proposed a connection between life and the Second Law of Thermodynamics in his monograph, "What is Life?", published in 1945. **Erwin Schrödinger** states:

"It (**a living system**) can only keep...alive by continually drawing from its environment negative entropy(**syntropy**)...What an organism feeds upon is negative entropy (**syntropy**) ."

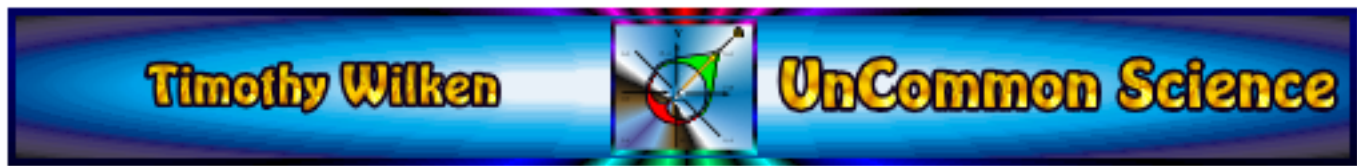
Living systems appeared to be violating the Second Law of Thermodynamics. This violation so concerned the earlier scientists, that they were quick to explain away this apparent violation. While they were willing to acknowledge that living systems did increase their internal order, this insisted this was only possible at the cost of decreasing order externally elsewhere in universe.

**James G Miller**<sup>1978</sup> states that:

"Living systems maintain a steady state of negentropy (**syntropy**) even though entropic changes occur in them as they do everywhere else. They accomplish this by taking in inputs of foods or fuels, matter-energy higher in complexity or organization or negentropy (i.e., lower in entropy) than their outputs."<sup>6</sup>

Life was thus described as an 'order' **filter**. Living systems simply took in 'matter-energy' of higher order than that which they excreted. This is of course true. Living systems do take in 'matter-energy' of higher order than that which they excrete. And, while this phenomena does to some extent help **life** escape the Second Law of Thermodynamics locally, there is something more going on here.

<sup>6</sup> **James G. Miller**, Living Systems, McGraw-Hill, Inc., 1978



Today<sup>2000</sup>, science knows that life is more than a simple filter for order. Living systems are stages of process wherein higher order ‘matter-energy’ is actively created from lower order ‘matter-energy’. No mother animal or human filters a newborn baby from the food that she eats.

As **simpler universe**—light, particles, atoms, and small molecules—**moves toward entropy**—ever-increasing disorder, disorganization, chaos, randomness, patternlessness, formlessness, and homogeneity, **complex universe**—large molecules, plants, animals, and humans—**moves towards syntropy**—ever-increasing order, organization, form, pattern, and heterogeneity.

**Buckminster Fuller** explains:

"The words synergy (syn-ergy) and energy (en-ergy) are companions. Energy studies are familiar. Energy relates to differentiating out subfunctions of nature, studying objects isolated out of the whole complex of Universe—for instance, studying soil minerals without consideration of hydraulics or of plant genetics. But synergy represents the integrated behaviors instead of all the differentiated behaviors of nature’s galaxy systems and galaxy of galaxies.

“Synergy is to energy as “whole” is to “part”. Synergy is to energy as integration is to differentiation. Energy studies separate out—isolating particular phenomena out of the total phenomena of Nature, and studying the separate phenomena. Synergy is the associate behavior of wholes within Nature.”<sup>7</sup>

The studying of ‘parts’ or ‘components’ in isolation has been well developed by classical science—this is the very definition of **reductionism**. But the studying ‘wholes’ or ‘unities’ requires a new **inclusive** approach, and new methods which form the synergic sciences.

This new approach first began in **1919**, when **Paul Kammerer** a Viennese biologist, proposed a new idea in science:

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<sup>7</sup> **R. Buckminster Fuller**, SYNERGETICS—Explorations in the Geometry of Thinking, Volumes I & II, New York, Macmillan Publishing Co, 1975, 1979





“Side by side with the causality of classical physics, there exists a second basic principle in Universe which tends towards unity; a force of attraction comparable to universal gravity. But while gravity acts on all mass without discrimination, this other universal force acts selectively to bring like and like together both in space and in time; it correlates by affinity regardless whether the likeness is one of substance, form, function, or refers to symbols.”<sup>8</sup>

**George Land**<sup>9</sup>, discoverer of the **Theory of Transformation** explains:

“Kammerer originated a concept that can now be seen to be true. Along with the process of entropy there is another process occurring in parallel, that of ‘**syntropy**’; information constantly produces new combinations, producing diversity and higher levels of organization.

“As a matter of fact, the function of **entropy** is *complementary* to that of **syntropy**. Because no organization of information can reach an absolute state, entropy aids our re-organization by breaking down old materials. It is the catabolic function of the physical Universe just as syntropy is anabolic. Life cannot exist without death, for life would have nothing to resynthesize into higher organizations if it were in static equilibrium. As the great biologist Haldane put it, “Normal death must apparently be regarded from the biological standpoint as a means by which room is made for further more definite development of life.” Death contributes to life in a specific causal chain. Decay is the handmaiden of creation.

“As an illustration of the radical difference between the entropy of some manifestations of energy and the syntropy of information, consider the Second Law of Thermodynamics as it applies to two bodies of unequal temperatures that are brought together. In time, heat energy will distribute itself evenly between the two bodies, and in contact with a wider environment as well, will continually equalize and redistribute their heat. The order of heat runs ‘downhill’ for organization to chaos. Yet, if we consider **information as a function of energy**, we see the reverse phenomena. The two bodies, rather

<sup>8</sup> **Paul Kammerer** Quoted in: George Land, Grow or Die: The Unifying Principle of Transformation, John Wiley & sons, New York, 1973

<sup>9</sup> **George Land**, Grow or Die: The Unifying Principle of Transformation, John Wiley & sons, New York, 1973



than diffusing their data, can actually increase their order and organization. Two atoms, two molecules, two cells, or two humans can exchange and share information, and will in time, through evolution, continually organize it into higher levels.

“Yet the foundation of physics assumes the verity of the **law of Entropy**: that the Universe is progressing into disorder. Time and time again experiments have demonstrated the facts of the Second Law of Thermodynamics and the facts are true—as far as they go. Unfortunately a great deal of scientific thinking is based on investigation of what we now can only characterize as **closed** systems, systems isolated from their normal environment. A classical statement is that when a phenomena is ‘left to itself’, this or that will happen. A researcher will do his best to isolate his experiment so that it will not be affected by outside influences or “perturbations”. In doing so he is in fact creating an isolated system, one which has no choice but to behave in an entropic manner as it is removed from the interactive growth with the larger system. Even in our age of sophisticated science this artificial methodology continues—violating the advice given by Max Planck over four decades ago when he said, “The assumption that the orderly course of a process can be represented by an analysis of it into temporal and spacial processes must be dropped. The conception of wholeness must therefore be introduced in physics as in biology.””<sup>10</sup>

When in 1945, the great physicist Erwin Schrodinger proposed that a phenomenon opposite to entropy existed in Universe. He called this phenomenon negative entropy or **negentropy**. He associated this phenomenon with life and proposed it was a local order-generating process opposite of entropy. Lancelot Law Whyte suggested in 1969, that Schrodinger had oversimplified things. Whyte states, “Biological order is not the exact opposite of thermal disorder.” Whyte is correct, synergy is missing from Schrodinger’s insight.

Entropy is **less** than the opposite of syntropy and syntropy is **more** than the opposite of entropy. They are **compliments**. They complete each other.

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<sup>10</sup> **George Land**, Grow or Die: The Unifying Principle of Transformation, ibid



## Compliments

It now appears, and this is argued by both Lancelot Whyte and George Land, that entropy and syntropy exist at every stage of process. Although **entropy** predominates in 'dead' Universe — light, particles, atoms, and simple molecules, **syntropy** exists there as well. And while, **syntropy** predominates in 'live' Universe — complex molecules, plants, animals, and humans, entropy exists there as well. The entropy phenomenon has been studied for over one hundred years, while the syntropy phenomenon is only now beginning to attract the systematic attention due to as far reaching a phenomenon as this.

In Nature, syntropy is the force towards **unity**. Syntropy exists within our bodies and minds. This is what gives birth to our humans having the greatest potential in Universe. If we are to develop our potential, we must understand synergy. Understanding ourselves will require that we understand 'wholes'. And while the understanding we have gained from examining the 'parts' — from our reductionistic science — has been indeed powerful, it is helpless to reveal the greater truth about ourselves and our Universe.

## Haskell's Co-Actions and Order

Now let us re-examine Haskell's concept of co-Actions from the perspective of **order**. Recall our discussion from Chapter 4, Haskell's *Co-Actions* apply to all 'wholes' or **unities** within Universe. If we imagine a two 'part' **unity** made up of 'part' "**X**" and 'part' "**Y**". We can then represent the resultant of their interactions within the **unity** as follows: If the two 'parts' have a neutral relationship, then (**the order within**) "**X**" and "**Y**" are unchanged by their interaction.

$$\boxed{X + Y} = \boxed{X} + \boxed{Y}$$

The sum of the 'whole' (**X + Y**) is **equal** to the sum of the 'parts' (**X**) + (**Y**).



If the two ‘parts’ have an adversary relationship, then **(the order within)** “X” and “Y” are made less by their interaction.

$$X + Y < X + Y$$

The sum of the whole (**X + Y**) is **less** than the sum of the ‘parts’ (X) + (Y).

Or, if the two ‘parts’ have a synergic relationship, then **(the order within)** “X” and “Y” are made greater by their interaction.

$$X + Y > X + Y$$

The sum of the whole (**X + Y**) is **greater** than the sum of the ‘parts’ (X) + (Y).

Haskell explained that there are three general classes of **co-Actions**. Co-Actions can be assigned to these three classes based on net effect.

There is a class of neutral Co-Actions (**the order within is unchanged**), a class of adversary co-Actions (**the order within is less**), and a class of synergic co-Actions (**the order within is greater**).

Edward Haskell explained that within these three classes there are nine possible specific co-Actions.

We can find nine specific types of co-Actions to describe the relationships between the ‘parts’ of any ‘whole’ or **unity**. The relationship within the unity might be good for “**X**”, good for “**Y**”; it might be good for “**X**”, neutral for “**Y**”; it might be good for “**Y**”, bad for “**X**”; it might be neutral for “**X**”, good for “**Y**”; etc.; etc..

Edward Haskell’s described these nine possibilities in his ***Co-Action Table***, shown below.

**X**

		<u><b>X</b></u>		
		—	0	+
<u><b>Y</b></u>	<b>Y</b> \ <b>X</b>			
	+	—,+	0,+	+,+
	0	—,0	0,0	+,0
	—	—,—	0,—	+,—

Within a unity, each ‘part’ may benefit (**the order within may increase**), may remain unchanged (**the order within not change**), or may be injured (**the order within may increase**). We see the same table below using the language of games.





X

Y

<u>Y</u> \ <u>X</u>	Lose	Draw	Win
Win	Lose,Win	Draw,Win	Win,Win
Draw	Lose,Draw	Draw,Draw	Win,Draw
Lose	Lose,Lose	Draw,Lose	Win,Lose

From UCS•1-The Basics, if we examine the nine possibilities wholistically for net effect, we see the emergence of three general classes of relationships within unities.

X

Y

<u>Y</u> \ <u>X</u>	Lose	Draw	Win
Win	Lose,Win	Draw,Win	Win,Win
Draw	Lose,Draw	Draw,Draw	Win,Draw
Lose	Lose,Lose	Draw,Lose	Win,Lose

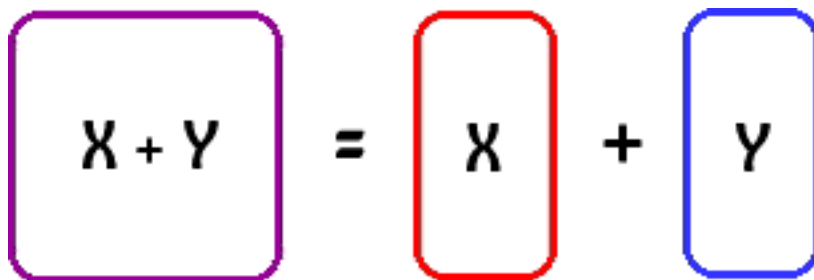
Adversity (Lose,Lose; Lose,Draw; Draw,Lose)  
Neutrality (Draw,Draw)  
Synergy (Win,Win; Win,Draw; Draw,Win)



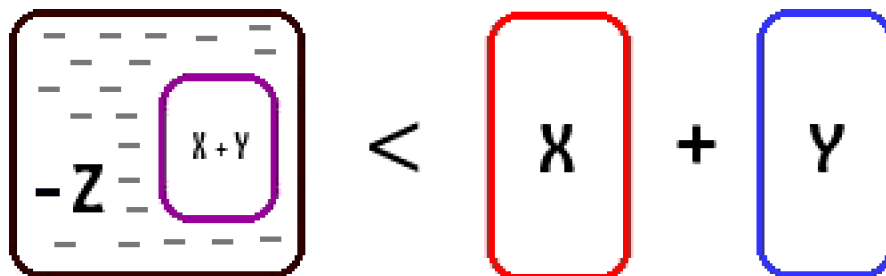
As we examine these three general classes of possible relationships we discover some striking differences. In the adversary class, there is a net loss (**loss of order**). The 'parts' lose something, They are less together than they would be apart. Haskell called the **adversary loss (the loss of order)** in the adversary relationship "**the conflictor's deficit**". The neutral class reveals no change. They are the same together as they would be apart (**the order within is the same**). However, in the synergic class, there is a net gain (**gain of order**). The 'parts' gain something, they are more together than they would be apart. Haskell called the **synergic gain (the gain of order)** in the synergic relationship the "**cooperator's surplus**".

We can now redraw our diagrams to include the **conflictor's deficit** and the **cooperator's surplus**. We can represent the **adversary loss** as ( - Z ), and the **synergic gain** as ( + Z ). This would alter our diagrams as follows:

**Neutrality represents unchanging order**

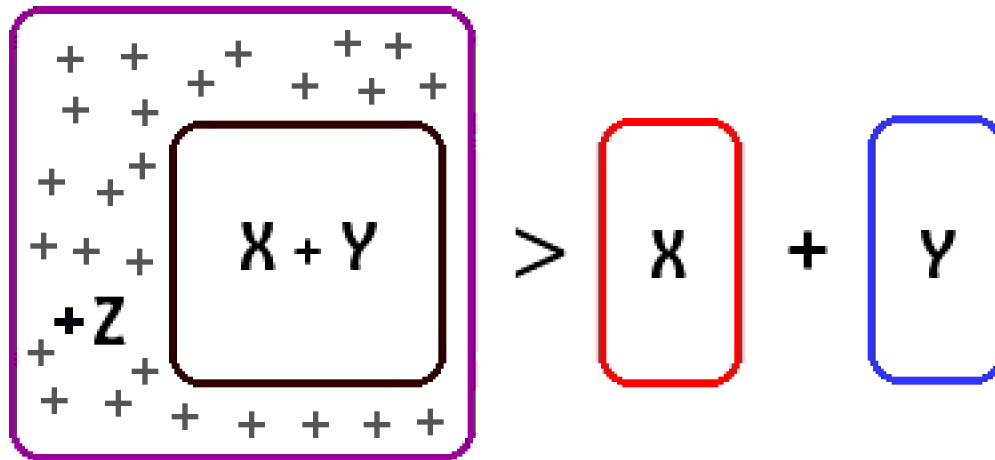


**Adversity represents decreasing order**





**Synergy represents increasing order**



The 'part' is either unchanged by the relationship, injured by the relationship, or benefited by the relationship. The relationship is either neutral, adversary, or synergic. The effect can also be partial. There may be relationships that are partially neutral, and/or partially adversary, and/or partially synergic.

### **Truth lies in eye of the beholder**

For humans, each participant determines for himself whether a relationship is synergic or adversary. This is determined from his point of view, and he cannot be fooled. He is either more happy, more effective, more productive because of the relationship; or he is less happy, less effective, less productive because of the relationship, or he is unchanged by the relationship. The truth is in the eye of the beholder. The effect can be partial. There may be relationships that are partially synergic, and/or partially neutral, and/or partially adversary.

### **True Synergy**

True synergy exists only when all 'parts' are benefited by the relationship. True synergy is **WIN-WIN**. True synergy is **+,+**. True synergy maximizes the **synergic gain** — maximizes ( **Z** ).

For humans, **true synergy** exists when all participants are **more happy, more effective, and more productive**. True synergy **maximizes the cooperator's surplus**.



X

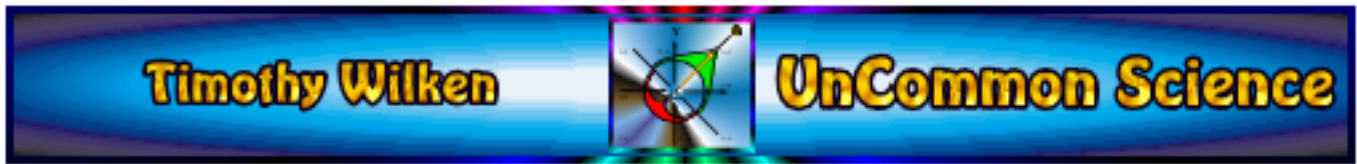
<u>Y</u>	<u>Y</u> \ <u>X</u>			
		Lose	Draw	Win
	Win	Lose,Win Net Neutrality	Draw,Win	Win,Win True Synergy
	Draw	Lose,Draw Net Adversity	Draw,Draw True Neutrality	Net Synergy Win,Draw
	Lose	Lose,Lose True Adversity	Draw,Lose	Win,Lose Net Neutrality

This is where our discussion ended in **UCS•1-The Basics**. But Haskell's work went much farther.

## ***Haskell's Periodic Coordinate System***

Haskell most important contribution may have been his development the Periodic Coordinate System. This system first appeared in 1940 as the Coaction Compass. It is a geometric tool used to help visualize and graph the resultants of adversary, neutral, and synergic relationships. **Harold Cassidy** explains:

“The Periodic Coordinate System was first used to analyze Mendeleev’s Periodic classification of the chemical elements. Mendeleev recognized a key variable to categorizing the atomic elements was their atomic weight. Today, later scientists standing on Medeleev’s shoulders have replaced **atomic weight** by the more operationally constant property **atomic number**. Periodicity is displayed by the properties of the chemical elements when the elements are arranged according to increasing atomic number. Haskell found evidence that not only the Kingdom of Atoms, but that of Nuclei, of Plants, of



Animals, and of cultures, displays a periodicity provided that the essential variables are properly chosen. This choice depends on cybernetic analysis, and its application leads directly to a sub pattern know as “Co-Action” ”<sup>11</sup>

It takes a small investment of time to understand, but once understood it becomes a powerful tool for analyzing relationships. As example, I will analyze the relationship between two humans, but Haskell used the Periodic Coordinate System (PCS) to analyze relationships within all seven “kingdoms” — particles, atoms, molecules, geoid systems, plants, animals, and humans. It can just as easily applied to groups of animals or humans, communities or nations.

Haskell’s Periodic Coordinate System provides a symbolic representation of the nine possibilities whenever ‘parts’ relate with other ‘parts’ to form ‘wholes’ or **unities**, and whenever choices are made by the ‘parts’ within the ‘whole’ or **unity**. This of course applies equally well to **Young’s Stages ofProcess** in Universe — Light, Particles, Atoms, Molecules, Plants, Animals, and Humans.

When you are in relationship with another individual, the two of you function scientifically as a single system. From the perspectiv of **synergic science**, you and the individual you are in relationship with form a “unity” — a “whole”. This is regardless of your awareness or intention.

Let X represent your condition both quanitatively and qualitatively at the beginning of the relationship. Geometrically, we can represent your condition by a vector.



As for the other individual in this relationship, we will represent his condition both quanitatively and qualitatively by the vector Y.



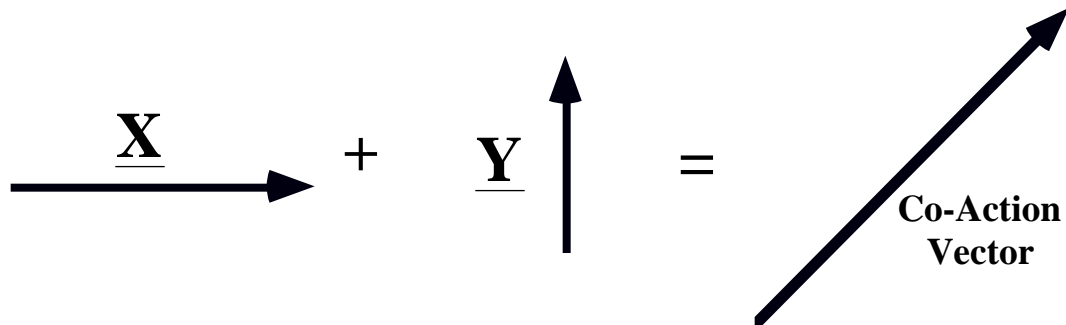
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<sup>11</sup> **Harold Cassidy**, Introduction to FULL CIRCLE: The Moral Force of Unified Science, Gordon and Breach, New York, 1972

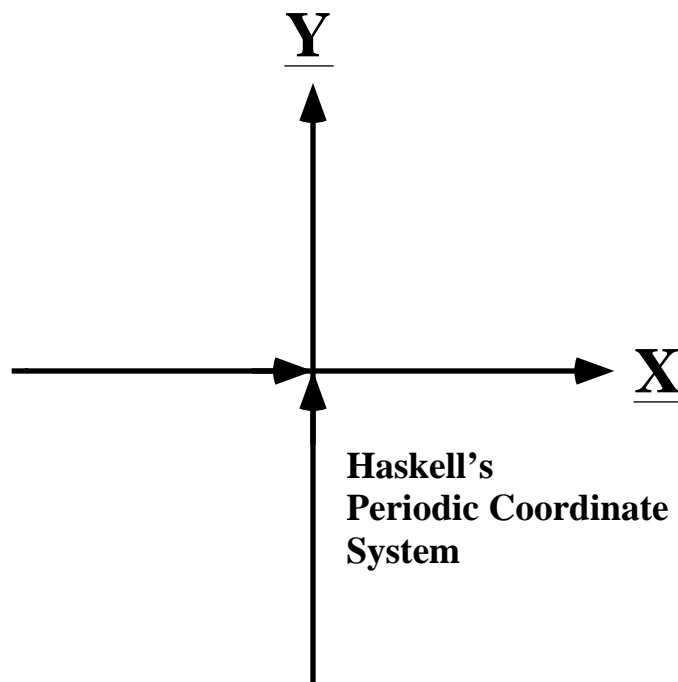




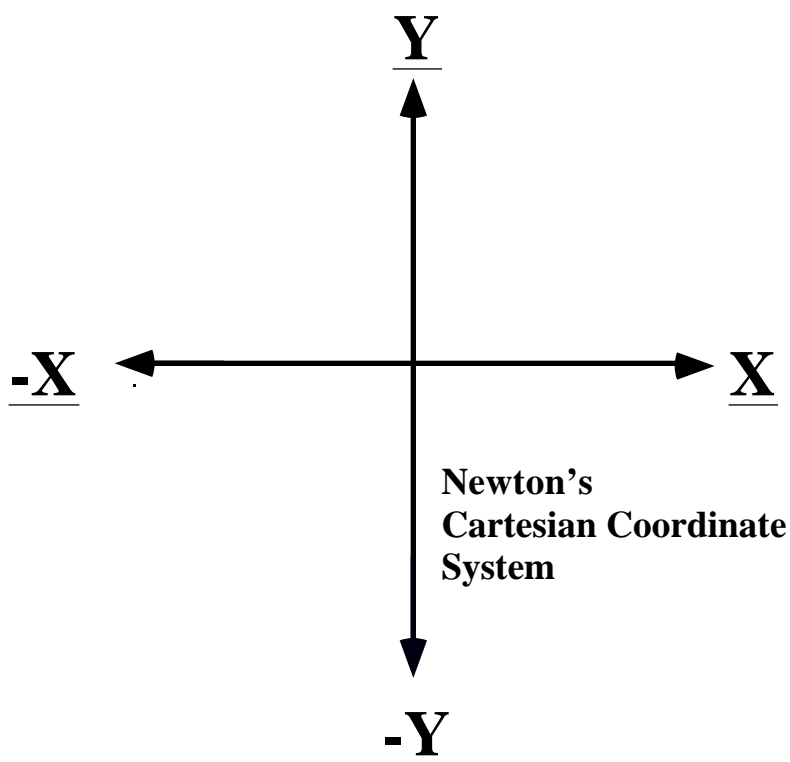
At the beginning of a relationship the size of the vectors X and Y, will usually differ. In this example, the X vector is longer meaning that X's condition is greater than Y's at the beginning of the relationship, but this is arbitrary to this example. Now when X and Y relate, we represent their "union" as a "single" system. We geometrically sum their vectors. This produces a co-Action vector that then represents the unity of their relationship.



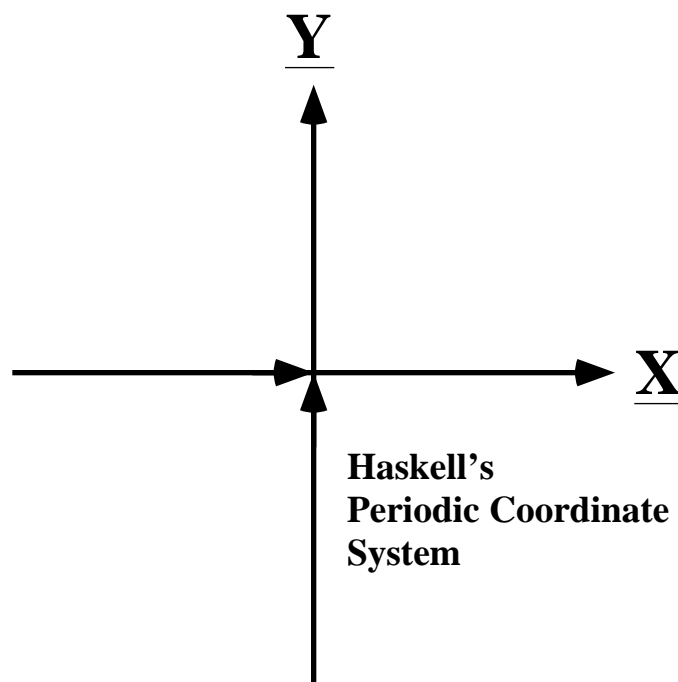
We will come back to our co-Action Vector in a moment. But first let's take a look at the Periodic Coordinate System's X and Y axis.



At first glance it looks something like Newton's Cartesian Coordinate system. .



No negative integers, the **X-axis** is left to right, and the **Y-axis** from below to above.



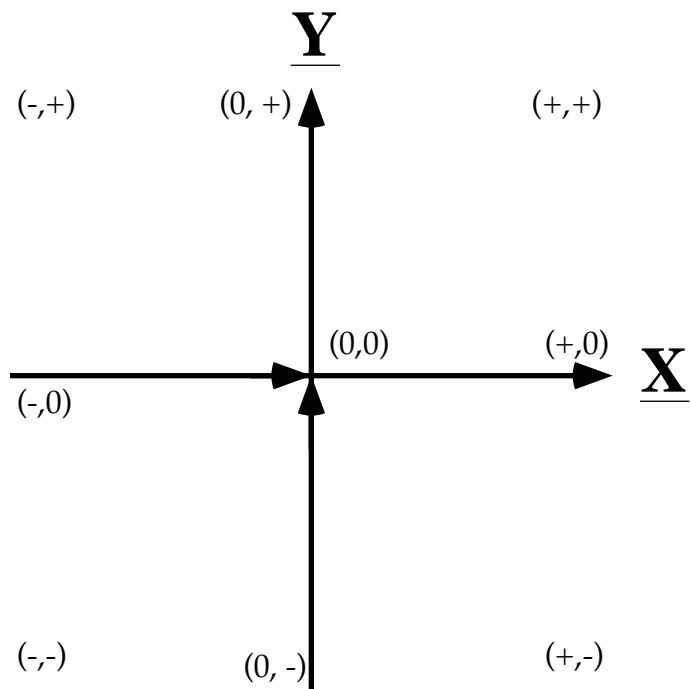
Next recall Haskell’s co-Action Table.

Y

X

<u>Y</u> \ <u>X</u>	—	0	+
+	—,+	0,+	+,+
0	—,0	0,0	+,0
—	—,—	0,—	+,—

Then place the co-Action Table over the X and Y axis of the Periodic Coordinate System.



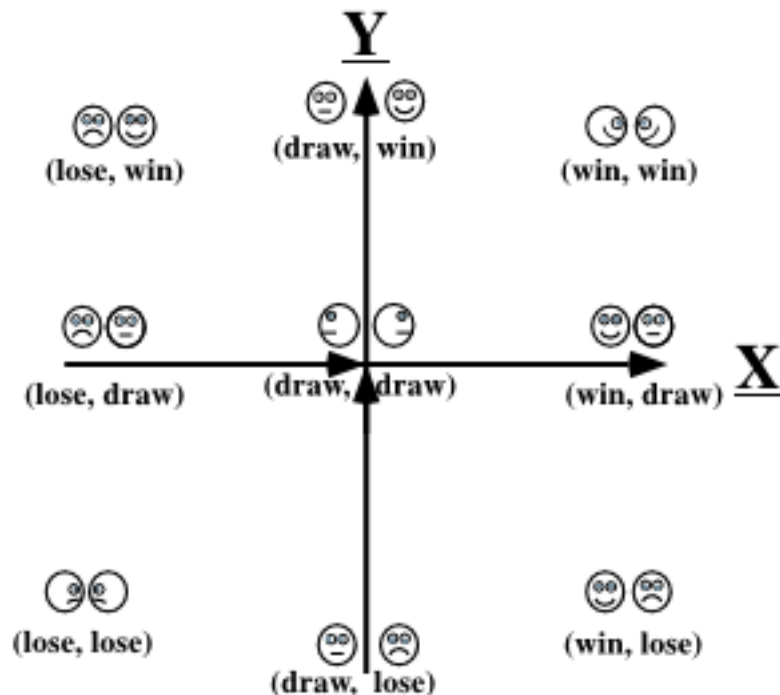
It is **important** to be mindful that the minus signs represent **loss (of order)** and not



**negative integers.** The plus signs represent **gain (of order)** and not **positive integers**. And, the zeroes represent states of **no change (of order)**, rather than an **integer with no content**. Or, in the language of games: Lose, Win, or Draw.

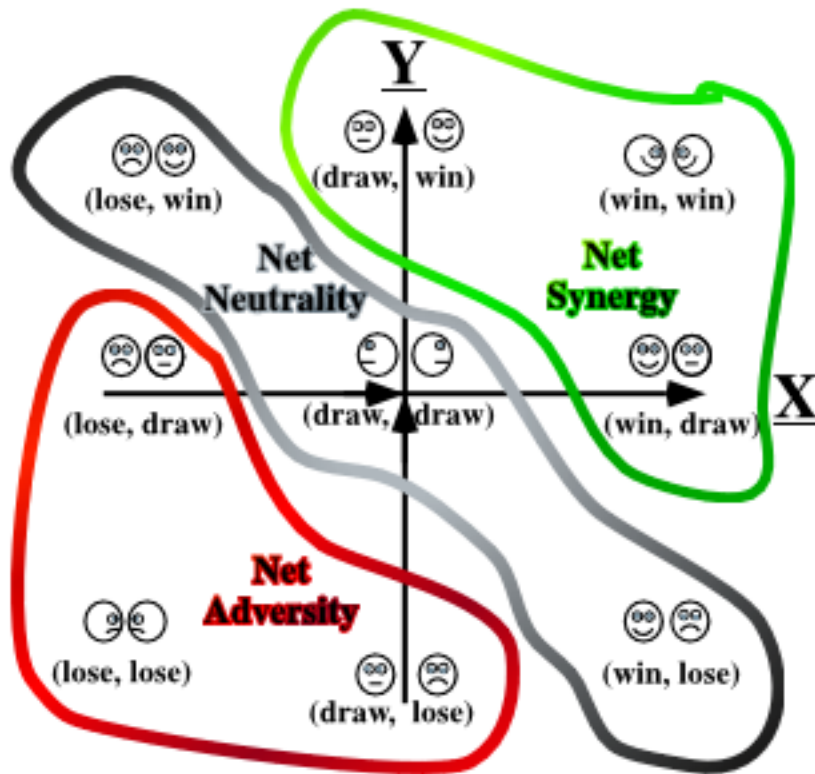
**X**

	<u><b>Y</b></u>	<b>Lose</b>	<b>Draw</b>	<b>Win</b>
<b>Win</b>		Lose,Win	Draw,Win	Win,Win
<b>Draw</b>		Lose,Draw	Draw,Draw	Win,Draw
<b>Lose</b>		Lose,Lose	Draw,Lose	Win,Lose

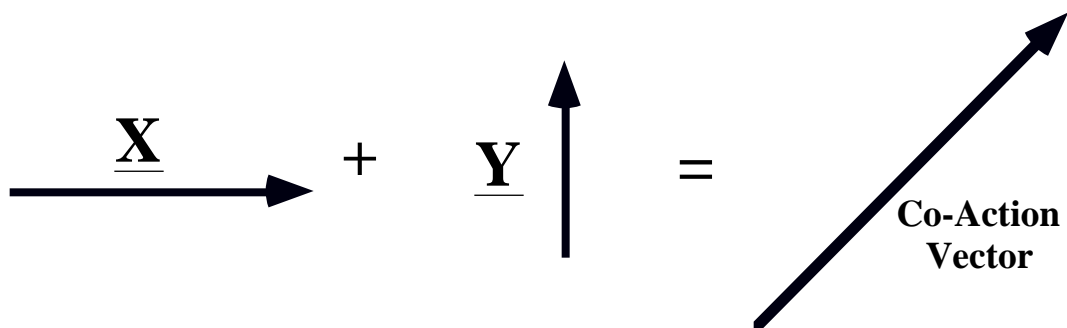




Thus we find that the three general classes of relationship: Net Synergy, Net Adversity, and Net Neutrality are represented on Haskell's PCS.



Now if we are to depict what occurs as a result of the relationship between X and Y, we need a initial reference device. Recall our initial vectors:

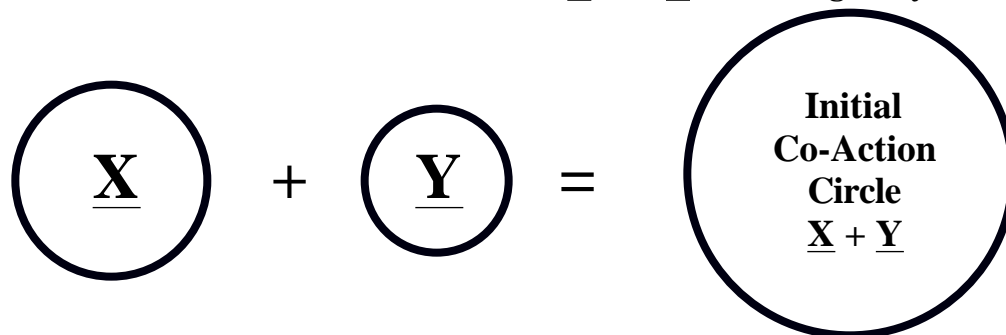


We can also represent our initial conditions as by the area of circles.

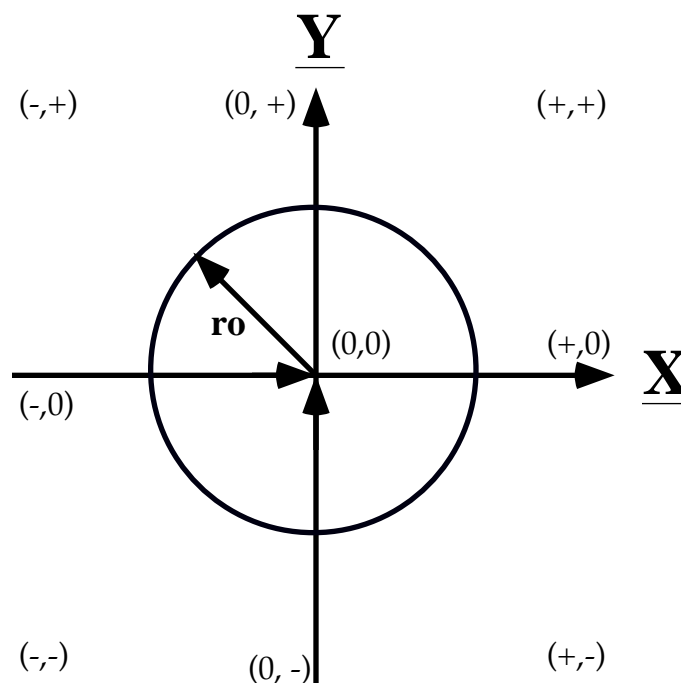




Then if we geometrically sum our circles, we get the “Initial co-Action Circle” whose area represents the initial state of the “union” X and Y as a “single” system.



It was considered a stroke of genius on Haskell’s part to use this **Initial Co-Action Circle** as the fourth axis of the Periodic Coordinate System. This circle represents the state of the union at the beginning of a relationship. It is the geometric sum of (X) and (Y) at the initiation of their co-Action. This reference circle is made by sweeping a neutral Co-Action vector, **ro**, around the ORIGIN.



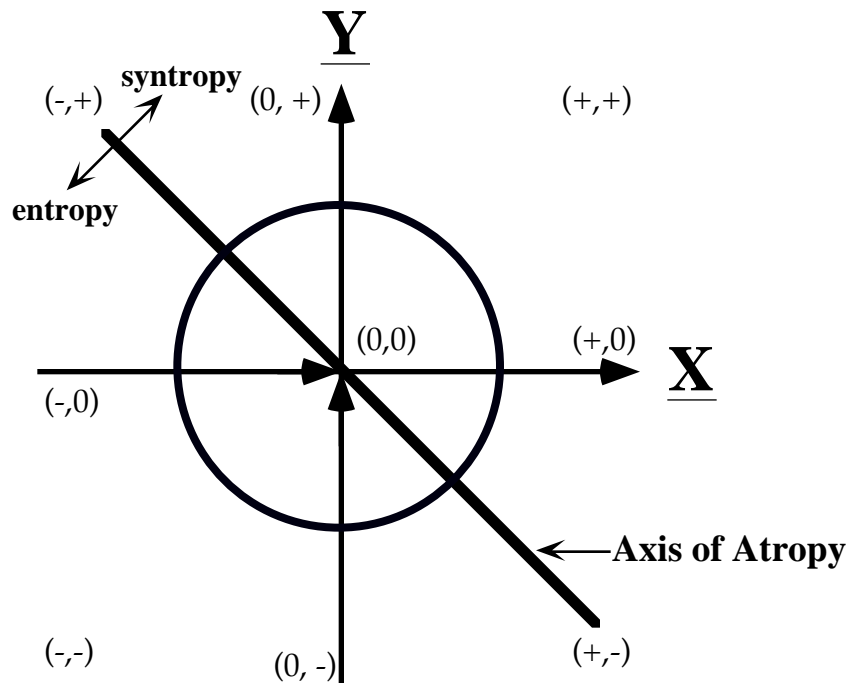
How do you represent whether or not a **relationship** or **co-Action** has a **synergic** or **net (+) positive** effect (increase in order), an **adversary** or **net (-) negative** effect (decrease in order), or a **neutral (0) or no effect at all** (no change in order) . You must have a reference, what was the state of the system before before the **co-Action** is initiated — the condition of the individuals before their **relationship** begins. This is



the role of the third axis — the **(0, 0) circle**.

Haskell sometimes called this the “scalar zero circle”, sometimes the Circle of Atropy. Perhaps an even better name might be the Circle of Neutrality. This circle represents a **net neutral** relationship between (X) & (Y). But, regardless what we call it, the area of this **zero-zero circle** represents the geometric sum of X and Y’s condition at the start of the relationship. This represents the simple sum of their individual order before their interaction.

Finally, Haskell added a fourth axis to the Periodic Coordinate System. Along this axis at any point, the magnitudes of (X) and (Y) are equal but their signs are opposite so the net co-Action is zero. He called this the Axis of Atropy.

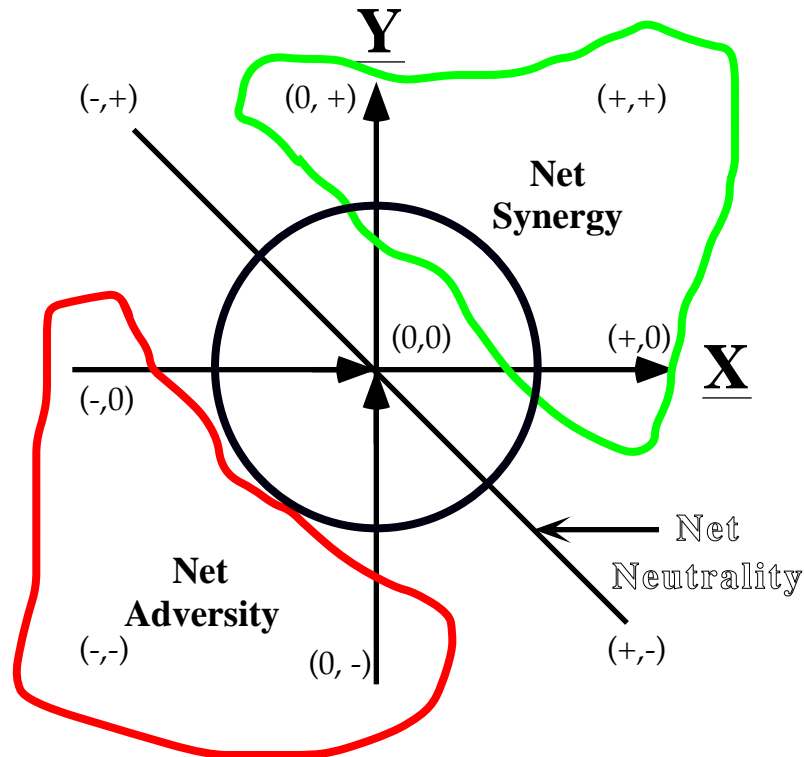


Co-Action vectors which are **greater** than the radius of the zero-zero circle are **net synergic** (increasing order). Those co-Action vectors that are **equal** to the radius of the zero-zero circle are **net neutral** (static order). And, those co-Action vectors that are **less** than the radius of the zero-zero circle are **net adversary** (decreasing order).

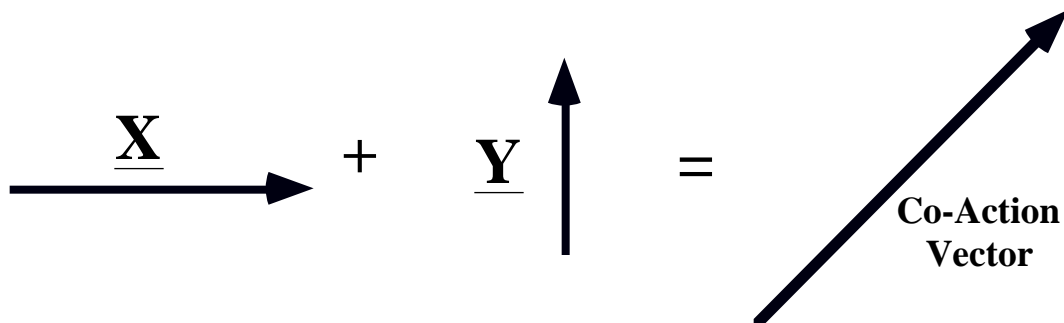
Notice that **syntropic** and **entropic** process are separated by the "**Axis of Atropy**". That which is to the right and up from the axis of atropy is **net synergic**. That which is left and below the axis of atropy is **net adversary**. And that which falls on the axis



of atropy is **net neutral**.

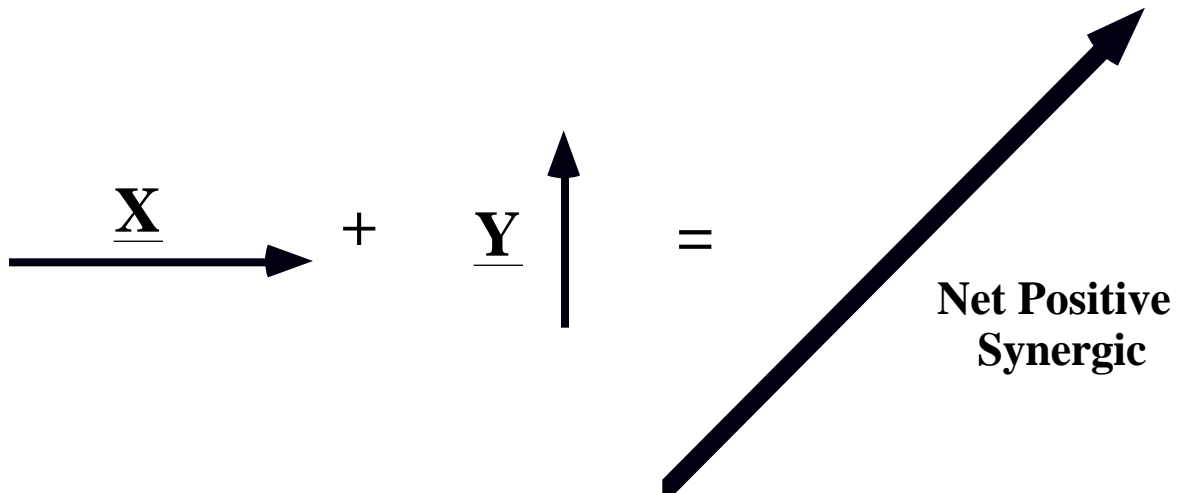


This then completes the four axes of Haskells' Periodic Coordinate System. We are now ready to use the PCS to examine some relationships. Again recall our initial vectors:

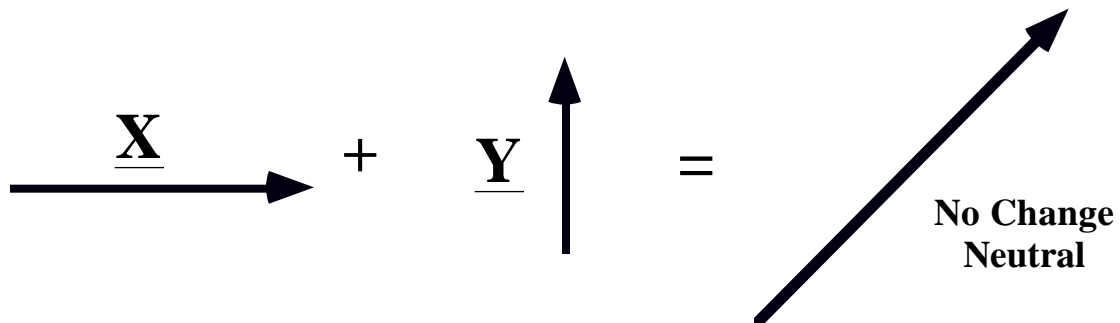


In geometry, a vector is a line whose length represents a particular quantity. The arrow tip is used when the direction of the vector also has special meaning. In the **Periodic Coordinate System** vectors are used to represent **order** which has both quantity and quality. The condition of an individual has both quantity and quality. The direction of the vectors will be discussed later. For now, we can then sum our vectors and examine the net effect without concern for direction.

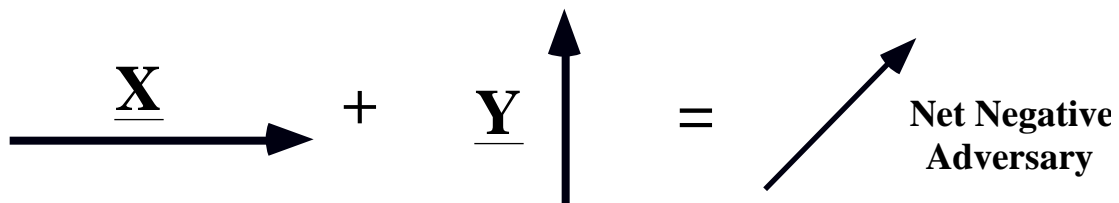
Now this geometric summing can produce a co-Action vector that is synergic or net positive (increasing order).



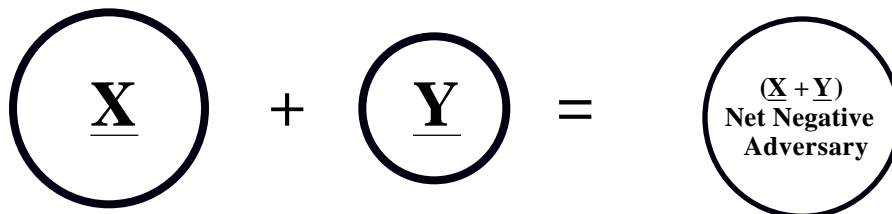
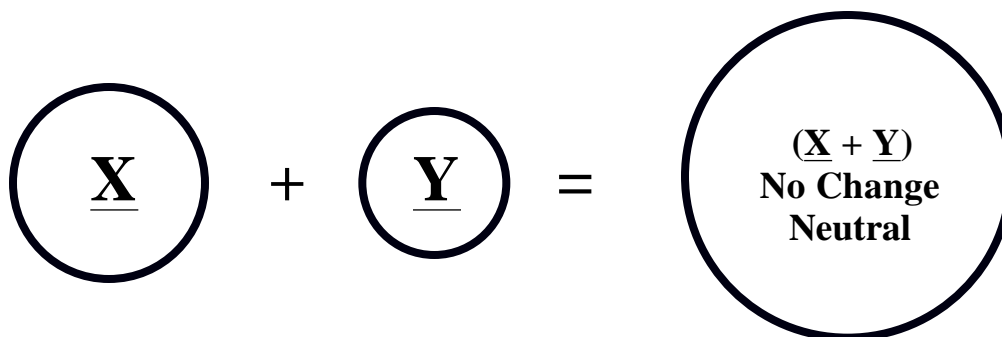
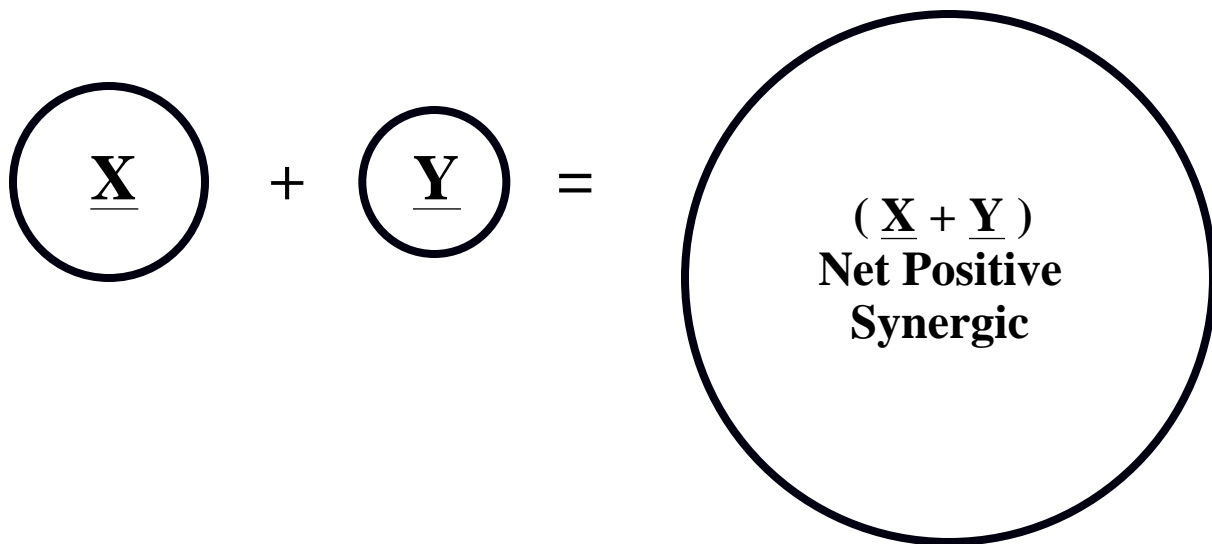
Or, it can produce a co-Action vector that is neutral with no net change (static order).



Or, it can produce a co-Action vector that is adversary or net negative (decreasing order).



Representing our initial conditions as circles:



Now with our reference circle in place, we are ready to plot our **resultant** co-Action vectors. That is what is the effect of the relationship on the conditions of (X) and (Y).

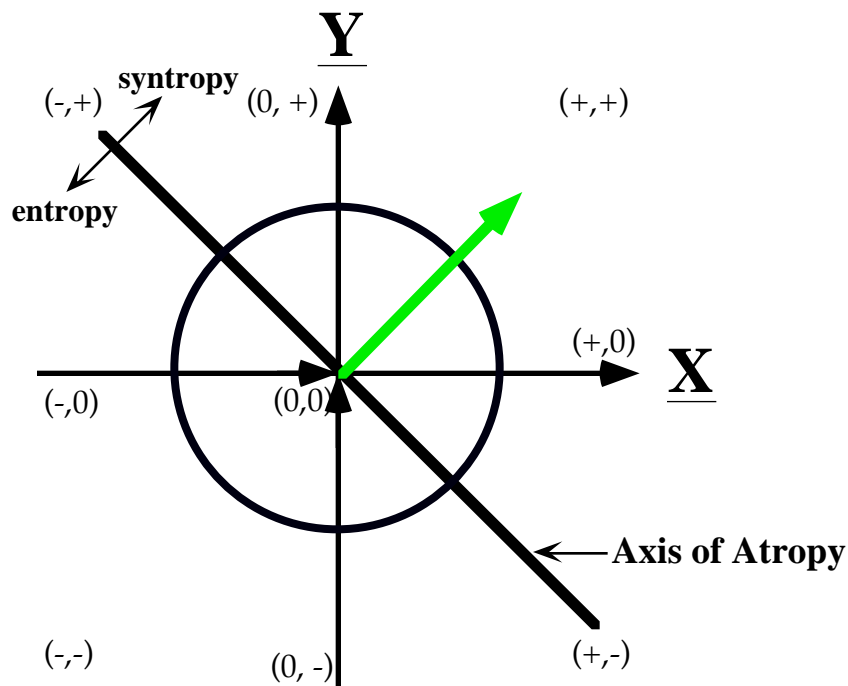


Our resultant co-Action vectors are plotted three uniquely different ways depending on whether they are synergic or net positive (**increasing order**), neutral or no change (**static order**), or adversary or net negative (**decreasing order**). Here the defined directions of the X and Y axes, take on significance.

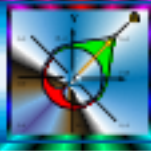
## Synergic Co-Actions

If the co-Action vector is **synergic** or net positive (increasing order), it is longer than the radius of the **zero-zero circle**.

Thus it is plotted from the **(0, 0) ORIGIN** towards the **(+, +) quadrant**. A **net synergic co-Action vector** is shown in the diagram below in **green ink**.



The ORIGIN is fixed at 0,0. The position of the arrowhead depicts X and Y's condition as a result of the relationship. The arrowhead is in the (+, +) quadrant so both are winning. Their **order** is increasing. The position is equally distant from both the X and Y axis so they are winning **equally**.

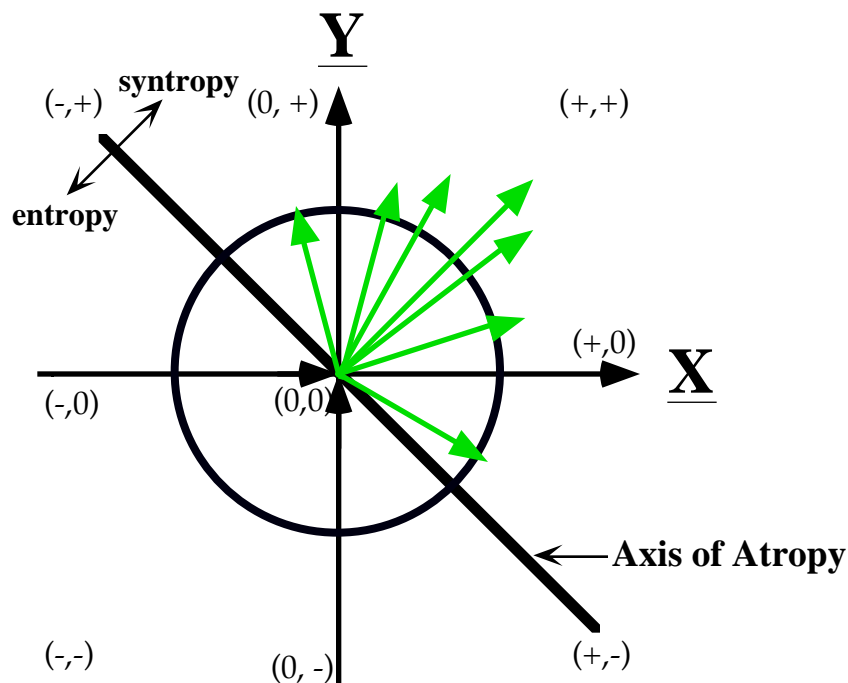


In this example, the relationship is synergic, both X and Y are in better condition than when they began the relationship. They have both won. They have both gained. And, they have benefited equally from the relationship. The individual **order** of both X and Y has increased because of their interaction.

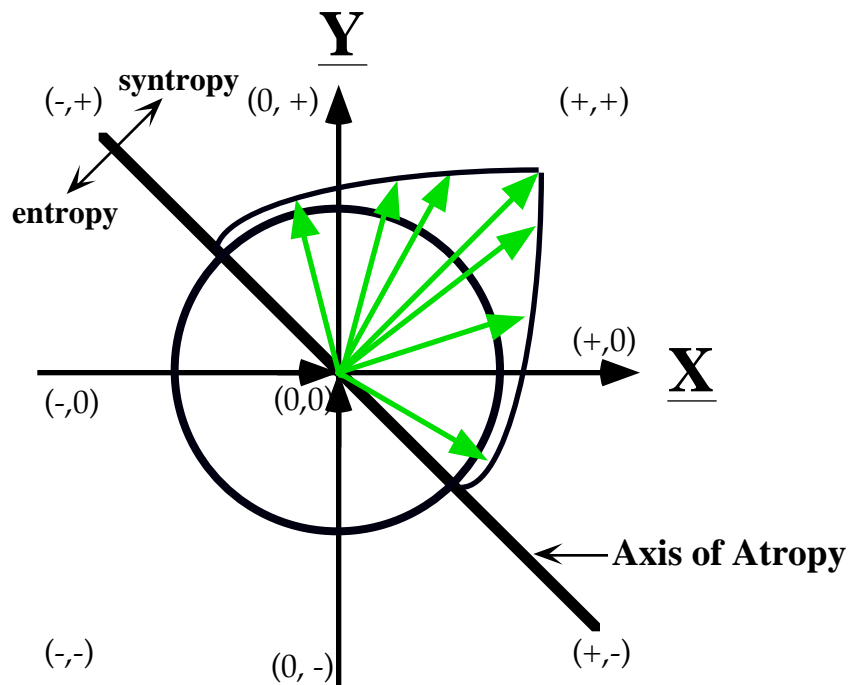
In a net positive co-Action or synergic relationship, Haskell chose the convention of shifting the reference perimeter away from the origin. The perimeter of the reference **zero-zero circle** can only shift in the defined directions of the X and Y axes. Thus all net positive co-Actions will lie outside the zero-zero circle.

Below, I have plotted a seven examples of **net synergic** co-Actions. The sum of their order **together** is greater than the sum of their order **individually**.

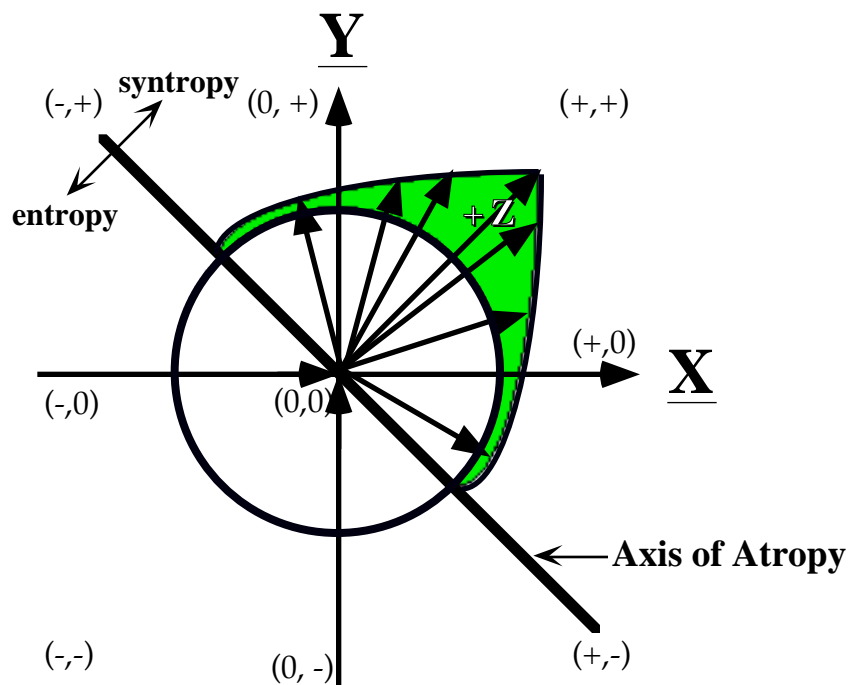
We can see that although they are all **net synergic** sometimes X wins more than Y and sometimes X loses. We also see that sometimes Y wins more than X and sometimes Y loses.



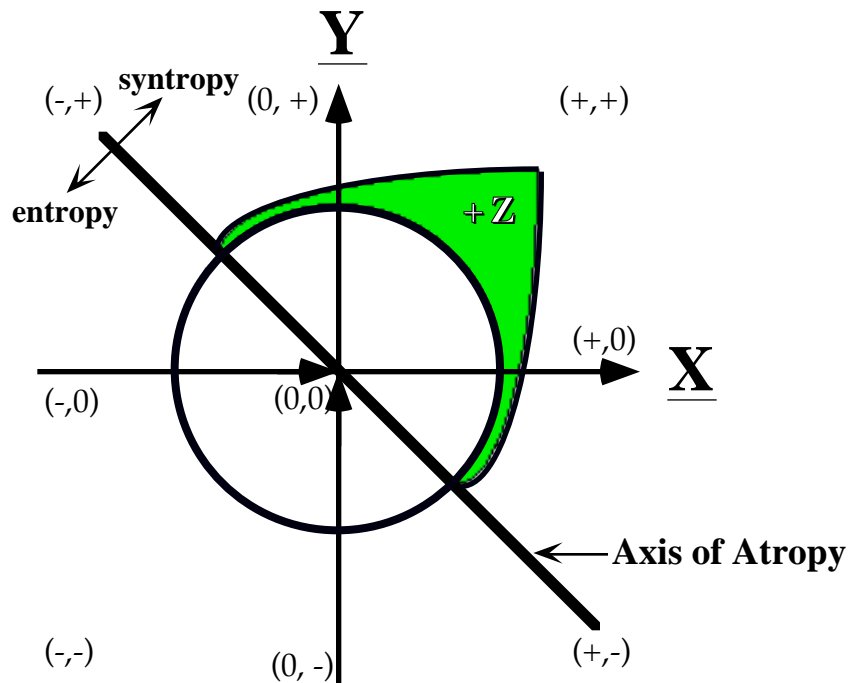
In a net synergic co-Action the area of the circle shifts to the right and above the reference zero-zero circle.



Above, we also see the **synergic gain** — the cooperator's surplus ( **+Z** ) outside the zero-zero circle to the right and above the Axis of Atropy.



Below, I have removed the net synergic co-Action vectors.



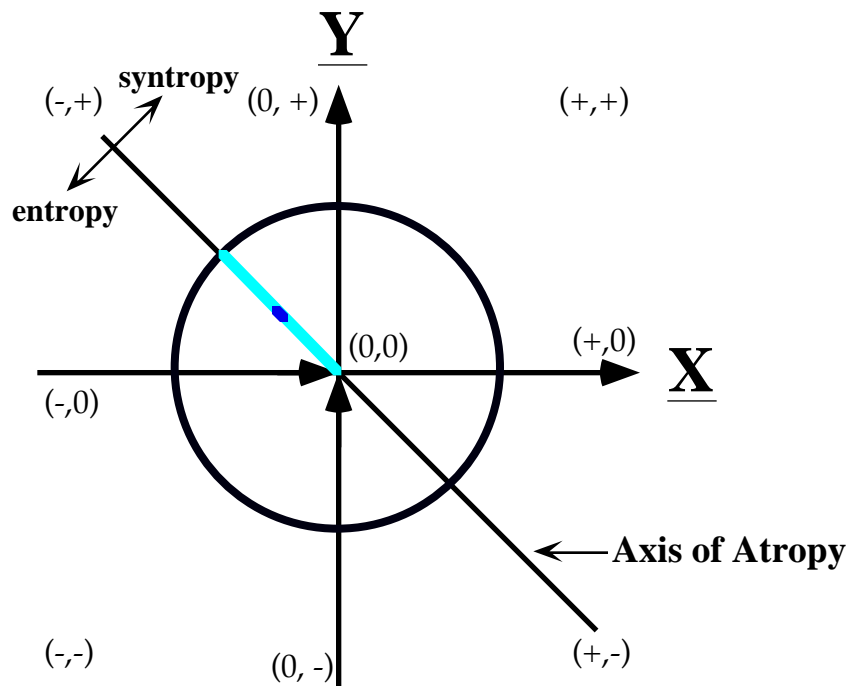
Now ,we can more easily see the **synergic gain** filled in with **green ink**. This is what **Haskell** called the **cooperator's surplus** ( **+Z** ).

It falls outside the zero-zero circle to the right and above the Axis of Atropy. This represents the net increase in **order** found in a synergic relationship.



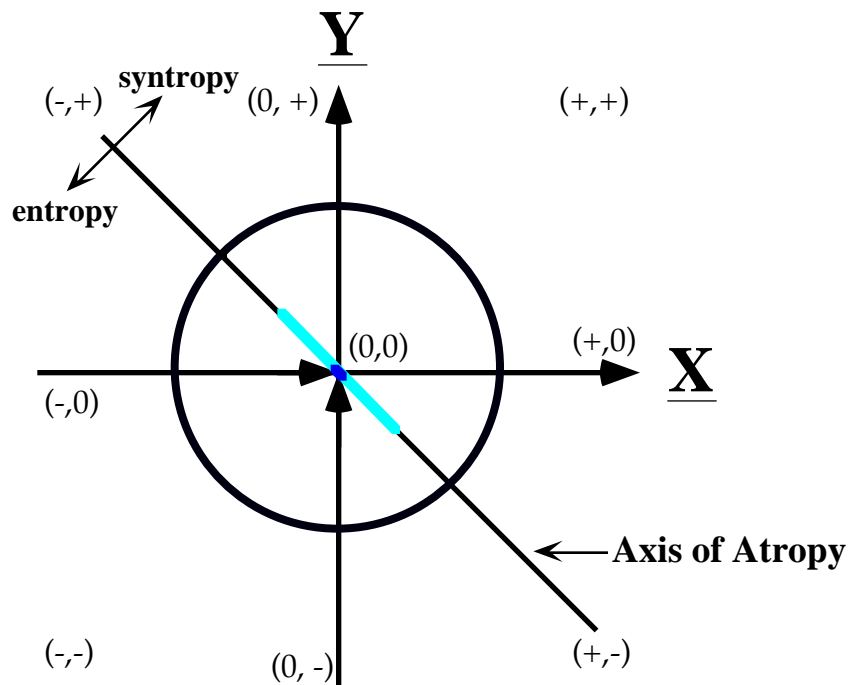
## Neutral Co-Actions

If the co-Action vector is net **neutral** or no change (static order), it is equal to the radius of the **zero-zero circle**. A net **neutral** co-Action is plotted on the Axis of Atropy shown below in **light blue ink**.

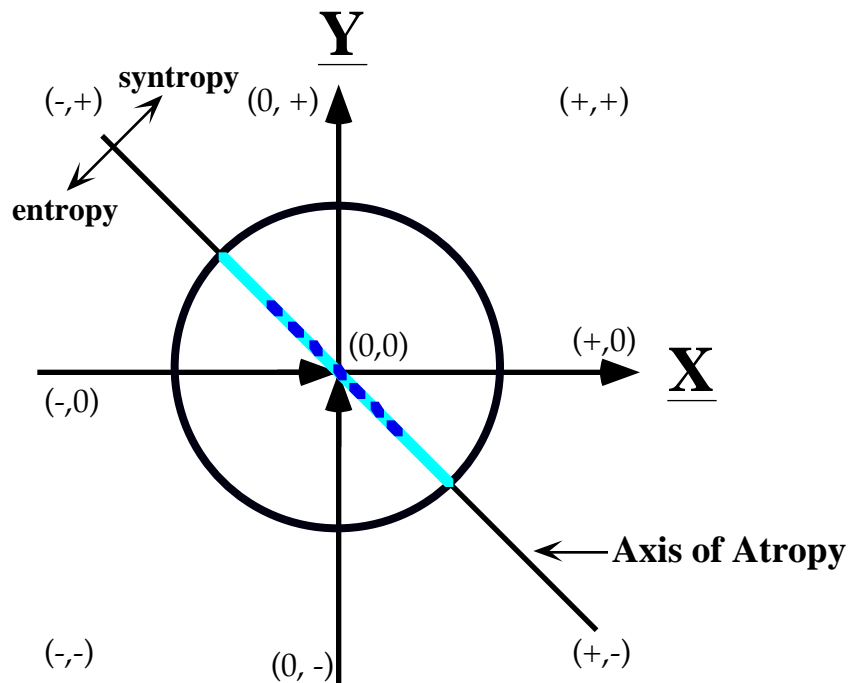


The center of the **net neutral Co-Action** is hi-lighted in **dark blue** to better designate the reality of **Y's** winning at the expense of **X's** losing. The position of the **dark blue dot** shows that X's position is shifted to the right of the Y Axis and that Y's position is shifted above the X axis.

Below, I have plotted a **net neutral co-Action** in which X and Y have simply **drawn** (as in **win, lose or draw**).neither of them are winning or losing. Their relationship has had no effect on each others condition. Their **order** has remained the same.



Next, I have plotted seven net neutral co-Actions. The **co-Action vectors** overlap, but we can distinguish them by their **centers**.



We see that although they are all **net neutral** sometimes X wins to Y's loss and

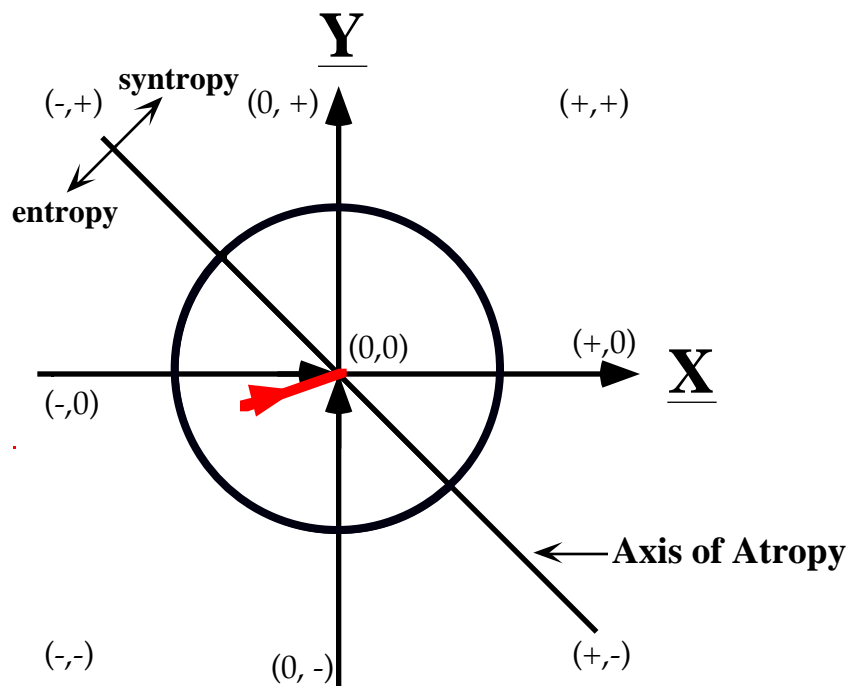


sometimes X loses to Y's win. The net neutral co-Action centered to the far left and above the Y axis represents Y's win at the total expense of X. The net neutral co-Action centered to the far right and below the X axis represents X's win at the total expense of Y. The net neutral co-Action centered at the ORIGIN (0, 0) represents X and Y both drawing neither winning or losing. The four other net neutral co-Actions fall somewhere in between.

## Adversary Co-Actions

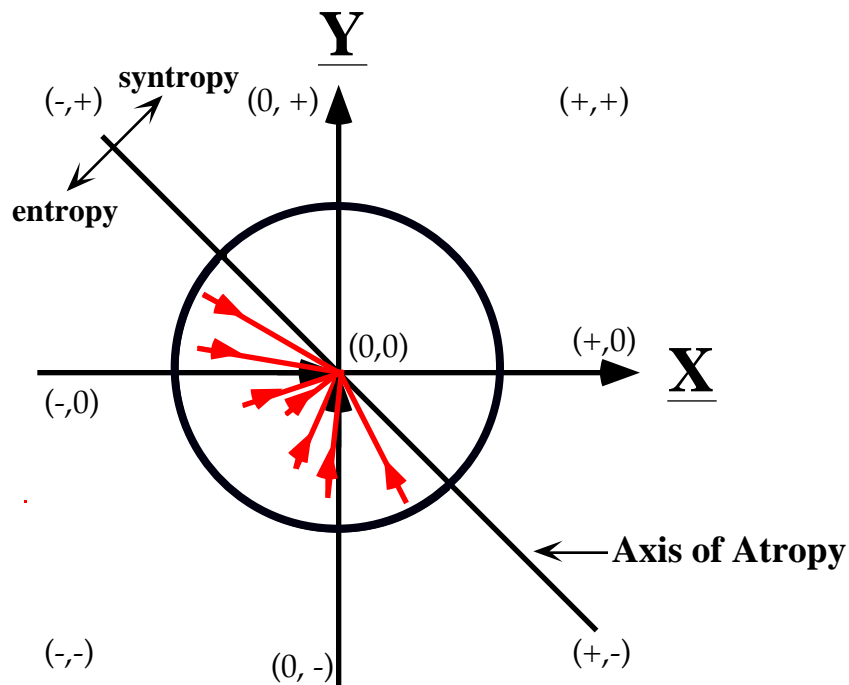
If the co-Action vector is **negative**, shorter than the radius of the scalar zero circle it is a net **adversary co-Action**. Haskell used the convention of drawing the co-Action vector from the position inside the zero-zero circle representing X and Y's condition from the direction of the (-,-) quadrant to the (0,0) ORIGIN.

A net adversary co-Action vector is shown below in **red ink**.

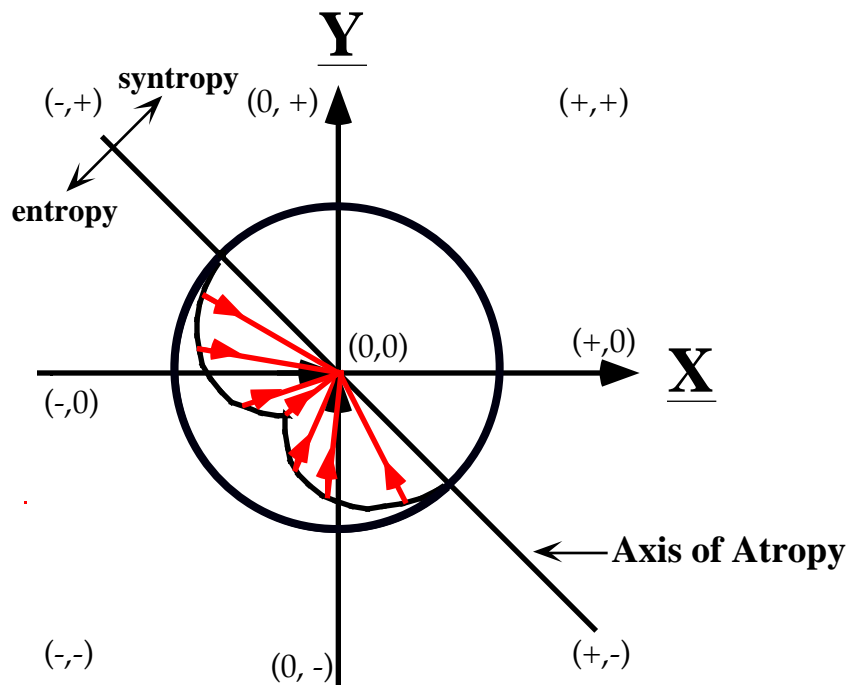


In drawing net adversary co-Actions, the vector is directed towards the (0, 0) ORIGIN and terminates there. However, it is the position of the back or but end of the vector, where the guide feathers on an arrow would be found that accurately depicts X and Y's condition. Below I have plotted seven net adversary co-Actions.



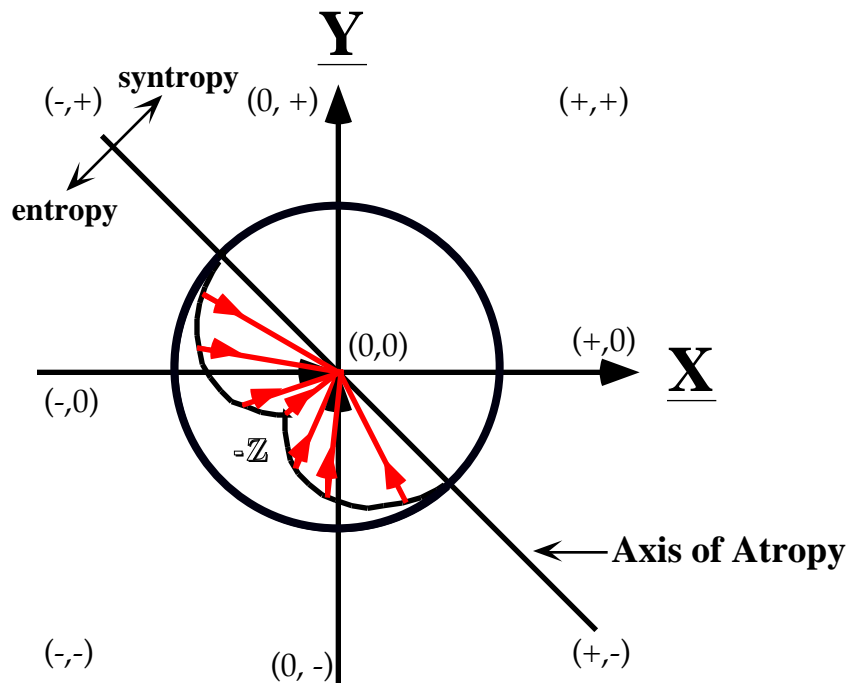


And all net adversary co-Actions lie inside the zero-zero circle. The reference perimeter is shifted toward the **(0, 0)** ORIGIN.





The perimeter of the reference zero-zero circle can only shift in the defined directions of the X and Y axes. Below and to the left of the axis of atropy under just under the perimeter of the zero-zero circle, we find the **adversary loss**. What Haskell called the **conflictor's deficit (-Z)**.



Haskell called the shape of the space for **-Z** that represents the **conflictor's deficit** the **Co-Action Cardioid**.

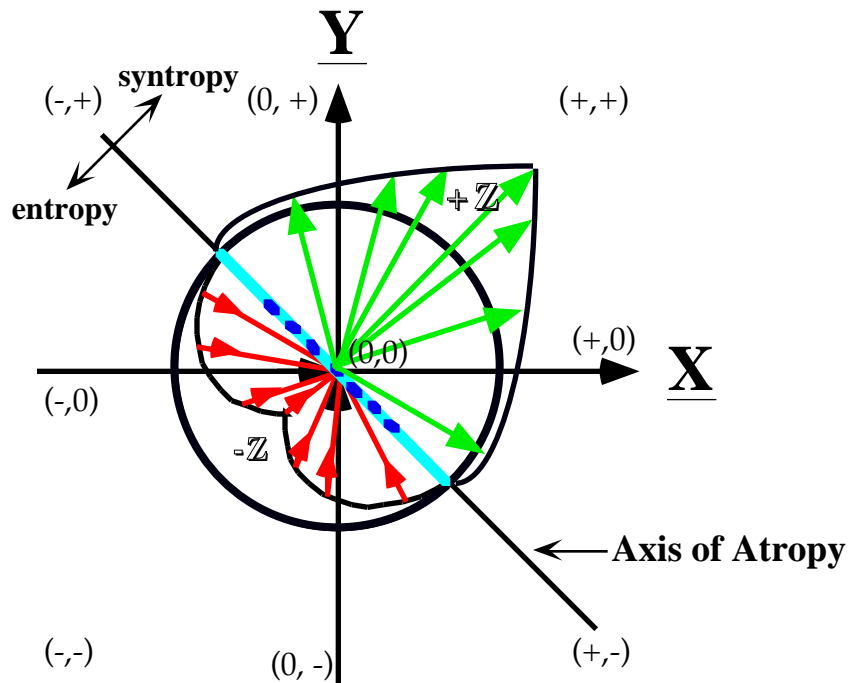
## Haskell's PCS

Haskell's Periodic Coordinate System presents syntropic, atropic, and entropic process on a single model. Synergic co-Actions represent syntropic process. Neutral co-Actions represent atropic process, and Adversary co-Actions represent entropic process.

To accomplish this Haskell synthesized three geometries — elliptic, plane and hyperbolic. He used Riemannian geometry to plot synergic co-Actions, Euclidean geometry to plot neutral co-Actions, and Lobachevskian geometry to plot adversary co-Actions.

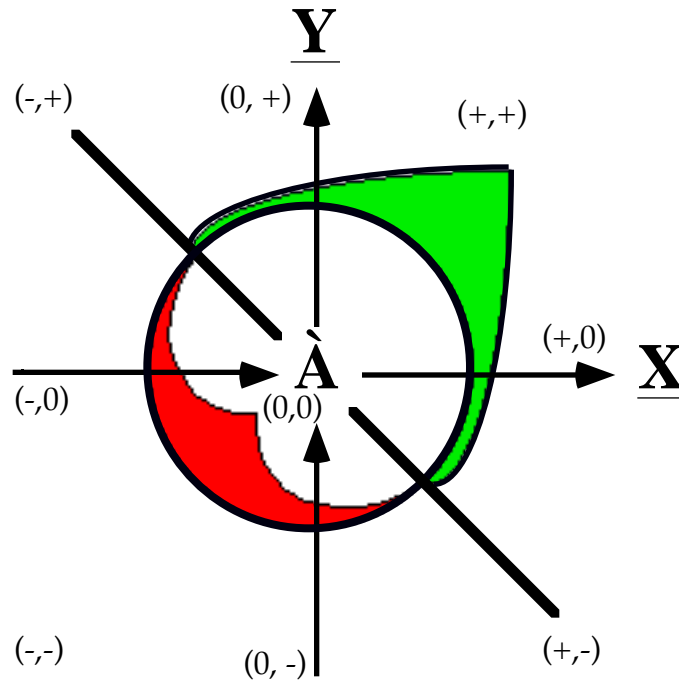


Below we see **Haskell's Periodic Coordinate System** with all three classes of relationship plotted.



The **Periodic Coordinate System** is a system that depicts **syntropy** or increasing order—relationship, organization, pattern, and its compliment **entropy** or discreasing order—the loss of relationship, organization, pattern, and form. And of enormous importance it also depicts **atropy** or no-change. Haskell's discovery of **atropy** and **Neutrality** is essential in understanding Live and Universe.

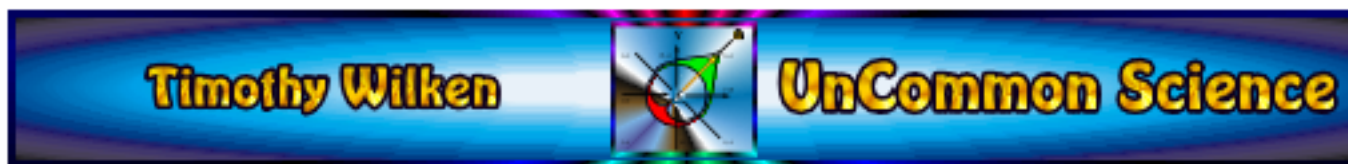
Haskell (with credit to Teilhard De Chardin) chose the “Alpha”,  $\hat{A}$ , symbol to represent **maximum entropy** and the “Omega”,  $\Omega$  symbol to represent **maximum syntropy**. **Atropy** is represented by “Axis of Atropy”



The Periodic Coordinate System depicts Synergy, Neutrality and Adversity in a single model. To Haskell the  $\hat{\cdot}$  point represented the ideal state of perfect harmony and oneness that could result in a Universe filled with synergic relationships. The  $\dot{A}$  point represented the end of Life and the heat death of the Universe. As he quoted Heisenberg in his writings:

“We think of the orderly as the good, and the confused and chaotic as the bad.”

Werner Heisenberg



## *Haskell's Moral Law of Unified Science*

Haskell explained:

“The first formulation of the MORAL LAW for a non-human “kingdom” of Universe was Dimitri I. Mendeleev’s discovery of the Periodic Law in 1869.

“The properties of the chemical elements are functions of their atomic weights.”

“What Mendeleev’s discovery states for Atoms is that “As ye sow, so shall ye reap,” where “reaping” is the properties of the chemical elements and “sowing” is the co-Action between the atom’s two components — its vast, light, electron cloud, and its tiny, massive nucleus.”<sup>12</sup>

Haskell’s analysis of the Atomic elements showed that these two components — the electron cloud and the massive nucleus related in only three ways — positive, neutral, or negative.

For humans, the earliest formulation of the Moral Law of Unified Science appeared 3500 years ago as the **doctrine of karma**.

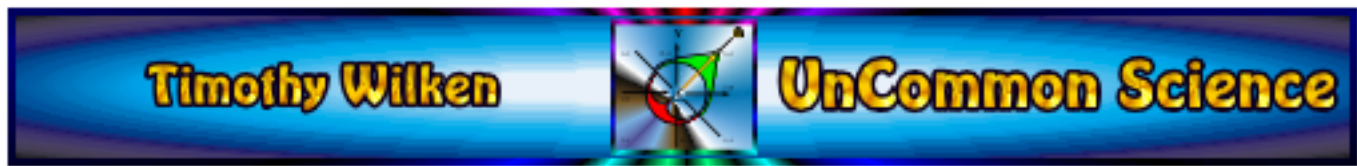
“Hinduism began in India about 1500 BC. The belief in rebirth, or samsara, as a potentially endless series of worldly existences in which every being is caught up was associated with the doctrine of karma (Sanskrit: karman; literally "act," or "deed"). According to the doctrine of karma, good conduct brings a pleasant and happy result and creates a tendency toward similar good acts, while bad conduct brings an evil result and creates a tendency toward repeated evil actions. This furnishes the basic context for the moral life of the individual.”<sup>13</sup>

The doctrine of karma was accepted by Buddha ~500 BC and is incorporated in modern Buddhism today. It appeared in western thought ~300 BC, in the Old Testament of the Bible as the phrase: “As ye sow, so shall ye reap.”

Recall Universe is now understood to be process. Reality is a happening. Many things

<sup>12</sup> **Edward Haskell**, The Unified Science, Private Papers, 1947-1986

<sup>13</sup> ENCYCLOPÆDIA BRITANNICA, [www.britannica.com](http://www.britannica.com), 2000



are going on all at once. Living systems—the plants, animals, and we humans all live within the **EVENT** paradigm. Fuller defined an event to be a triad of related phenomena— **action, reaction, resultant**.

The dynamics of all behavior can be understood using these three concepts. Fuller discovered for every **action** there is a **reaction**, and a ***precessional resultant***.

I can decide on an action. I can then implement my **action**. The environment including all life forms **react** to my action, the vector sum of the two produce a **resultant**. I **act**, the rest of the world **reacts**, and when it all settles down the change made by the interaction is the **resultant**.

Now reformulating **Haskell's** The Moral Law of Unified Science to include **Fuller's** Principle of Action—Reaction—Resultant, we get:

**Adversary action** tends to provoke **adversary reaction** ending in an **adversary resultant**.

**Neutral action** tends to provoke **neutral reaction** ending in a **neutral resultant**.

And **synergic action** tends to provoke **synergic reaction** ending in a **synergic resultant**.

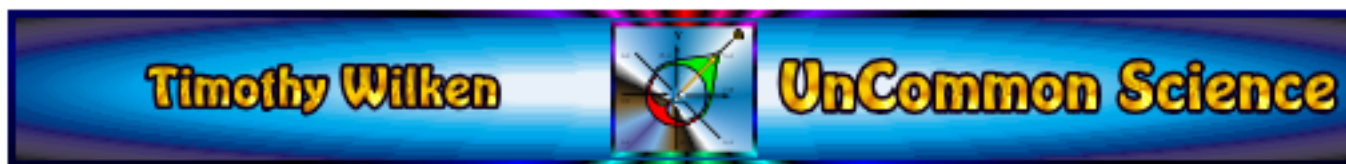
“As ye sow, so shall ye reap.”

We humans have three choices. We can **sow** adversary actions and **reap** adversary resultants. We can sow **neutral** actions and **reap** neutral resultants. Or we can **sow** synergic actions and **reap** synergic resultants.

## ***N. Arthur Coulter's Human Synergetics***

Another synergic scientist, who worked completely independent of Haskell, also discovered important truths about synergic relationships. If we choose to sow synergic actions, then we will need to understand synergic relationships more deeply. **N. Arthur Coulter** explains that **rapport** is an essential ingredient in the creation of synergic relationships<sup>14</sup>:

<sup>14</sup> **N. Arthur Coulter**, SYNERGETICS: An Adventure in Human Development, Prentice-Hall, 1976  
<http://www.synearth.net/coulter/synergetics.pdf>



“The dictionary defines rapport as: “The state of persons who are in full and perfect agreement. A relation of harmony, accord, conformity, affinity, concord, and unity — especially in an intimate and harmonious relationship.” In synergetics, rapport is used essentially in this sense, with certain precise qualifications.

“Rapport is determined by the degree of synergy, empathy, and communication that exists. This is symbolized by the Synergy-Empathy-Communication Triangle (SEC Triangle).

## ***SEC Triangle***

“The SEC Triangle provides a basis for evaluating the degree of rapport that exists, and also for systematically improving rapport. Each leg of the triangle mutually reinforces the other legs, so that there is a synergic relationship.

“The word “synergy” means, literally, “working together.” In medicine, it has long been used to denote the working together of two or more drugs, or of two or more muscles acting about a joint. Applied to the human mind, “synergy” denotes the working together of the enormous variety of functions that comprise the mind, producing a new whole that is greater than the mere sum of its parts.

“Within the SEC Triangle, Synergy refers to those interactions, between two individuals in a relationship, that promote the goals and support the efforts of both participants. Empathy refers to the mutual understanding that both participants have for each other — each comprehending the other’s viewpoint without necessarily agreeing fully or adopting it as their own. Communication refers to the effective, two-way interchange of data, ideas, etc. between the two individuals.

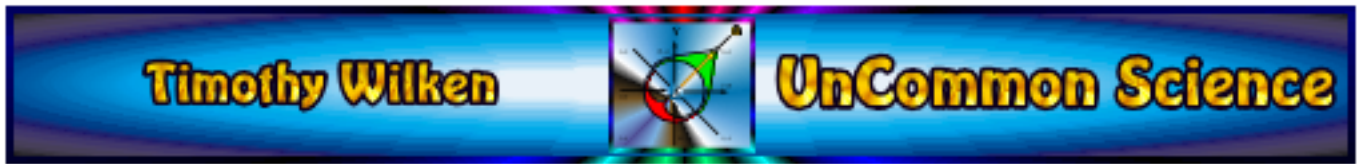
“Synergy promotes empathy and communication.

“Empathy promotes communication and synergy.

“Communication promotes synergy and empathy.”<sup>15</sup>

<sup>15</sup> N. Arthur Coulter, SYNERGETICS: 1976, *ibid*





Synergic relationship requires much closer and more effective communication than does neutral or adversary relationship. Coulter identifies three critical elements in synergic relationship — **synergy**, **empathy** and **communication**, the synergist uses these elements **explicitly** during his relationships. This means he is consciously aware of his goals for synergy, empathy, and communication.

**Synergy** — In synergic relationship, you understand that you win when others win. You are constantly looking for an opportunity to synergize — an opportunity for **co-Operation**. You are always considerate of the needs and interests of others without neglect to your own self interest and needs. This is what Coulter calls **synergic altruism**.

Synergy is when everyone wins. The synergic altruist knows that helping his associates, is the surest way to meet his own needs.

**Empathy** — Empathy can be defined as: 1) Literally “knowing how someone feels”. 2) Imagining yourself in their position. You can understand another human better, if you “walk a mile in their shoes”.

Recall within a synergic relationship,  $(1 + 1) \gg 2$ , we are more together than we are separately. We benefit from sharing the **synergic gain — the cooperator’s surplus**. If we wish to optimize our relationship, you must know where your associates are really coming from. If you are to provide effective help, you must know them well. Empathy is not sympathy. You do not need to agree with another individual, to know how they feel.

**Communication** — Communication can be defined as the accurate transmission of pattern with appropriate meaning and feeling from one human mind to another. In synergic relation, I value the pattern of my associates. I want to know what they think and feel. I want to know their goals. In synergy, I will promote all goals whenever I can, and avoid impedance to anyone. **N. Arthur Coulter** continues:

### ***Coulter’s Principle of Equivalence of Status***

“It is pretty obvious that men are not created equal. The idea of equality, taken from a literal interpretation of the words of the American Declaration of

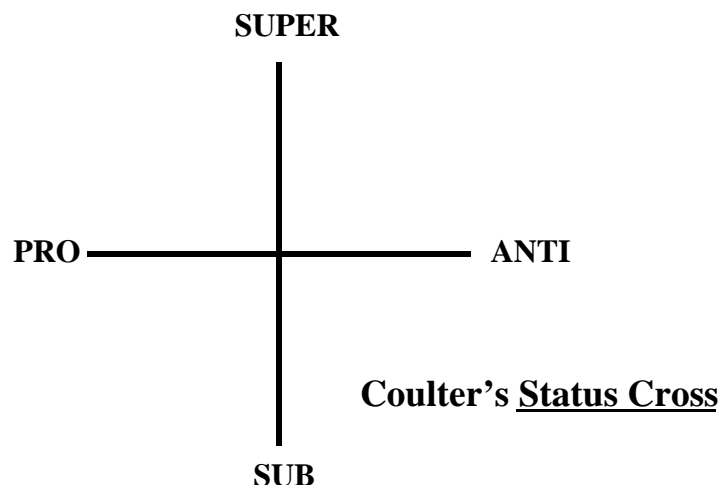
Independence, can lead to some rather difficult ideological positions.

“But Thomas Jefferson did not mean that men and women were identically equal. He meant that, in a just social order, all persons should be treated equally, that none should have special privilege by virtue of accident of birth, wealth, or social position. Each person is a unique individual; but each is entitled by inalienable right to equal protection of the law, to equal treatment by the law, and to equality of economic and social opportunity. Only when all men and women have social equality can the unique potential of each be realized, for the ultimate benefit of all. Social equality does not mean identical treatment, merely that there is some kind of fair balance — in a word, synergic equality.

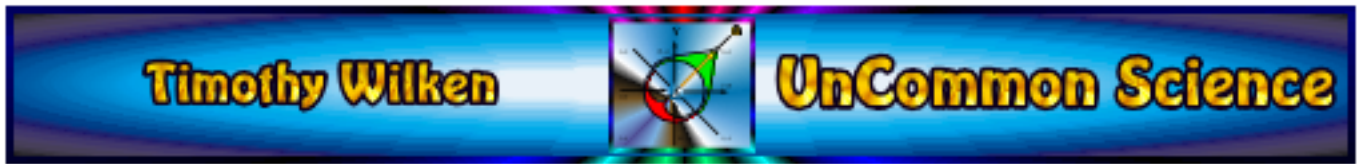
“In synergetics, we formulate this idea as the Principle of Equivalence of Status.

“This may be stated as follows: the flow of synergy, empathy, and communication between two individuals is optimum when they have equivalent status with respect to each other. Rapport is optimum when the status of both are equivalent on the Status cross.

Equivalent status is indicated by the center of the cross. The four poles of the Status Cross represent the attitudes the individuals hold toward each other.”<sup>16</sup>



<sup>16</sup> N. Arthur Coulter, SYNERGETICS, 1976, ibid



**SUPER** is when either party to a relationship feels or acts superior, better, dominant, stronger, smarter, more forceful, etc., etc..

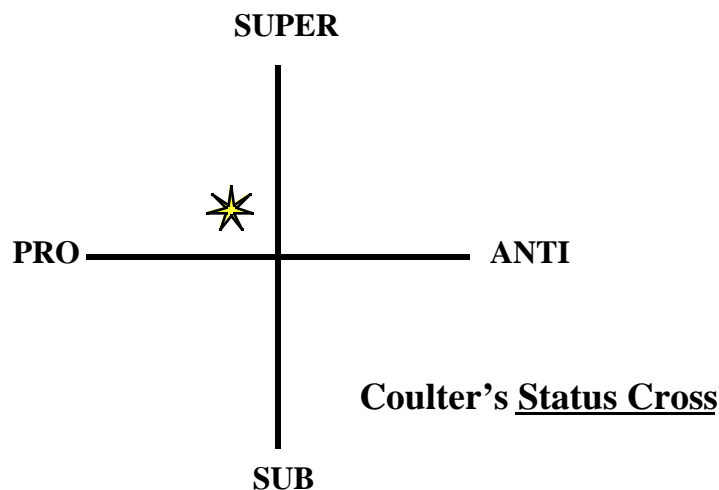
**SUB** is when either party to a relationship feels or acts inferior, lesser, subservient, weaker, dumber less forceful. etc., etc..

**PRO** is when either party to a relationship is too supportive. This is when a friend or family member is so too quick to help you, so that you aren't allowed to act or think for yourself — overly supportive.

**ANTI** is when either party to a relationship is against the other, unfriendly, critical, hostile, belligerent, etc., etc.. Coulter continues:

“When one regards the other as Super, the flow of synergy, empathy, and communication (SEC) tends to go down. “When one regards the other as Sub, SEC goes down. When one regards the other as Pro, as someone to be dependent upon, SEC goes down. When one regards the other as Anti, SEC goes down.

“The optimum position is considered to be slightly to the left and above center — i.e. when each regards the other as somewhat Pro and somewhat Super.



“The effectiveness of a synergic relationship will be optimized by insuring that the Equivalence of Status is maintained.”<sup>17</sup>

Now again recall our scientific reformulation of Haskell's Moral Law of Unified Science to include Fuller's Principle of Action—Reaction—Resultant:

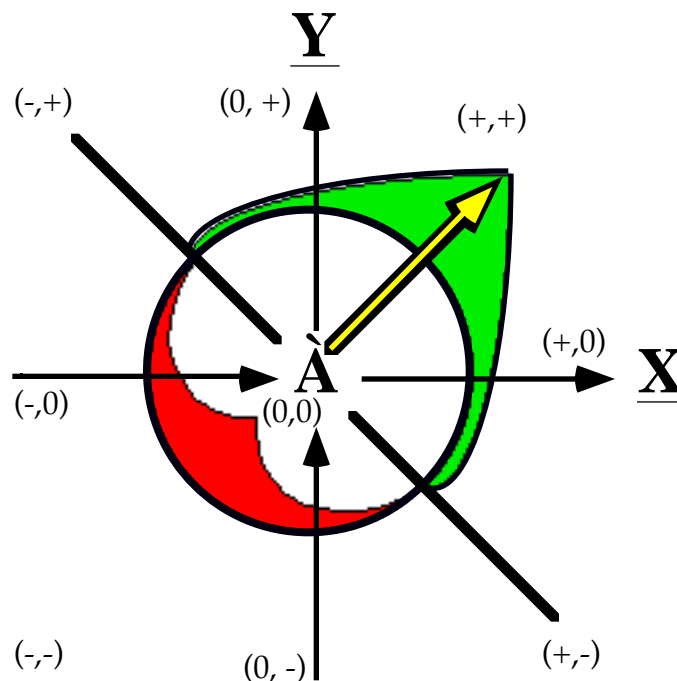
**Adversary action** tends to provoke **adversary reaction** ending in an **adversary resultant**. **Neutral action** tends to provoke **neutral reaction** ending in a **neutral resultant**. And **synergic action** tends to provoke **synergic reaction** ending in a **synergic resultant**.

“As ye sow, so shall ye reap.”

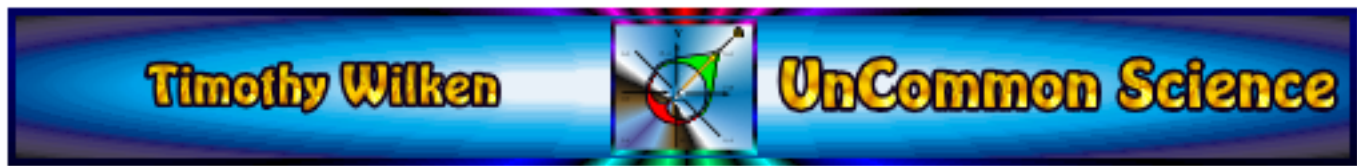
If we now combine **Haskell's** Moral Law of Unified Science, **Fuller's** Principle of Action—Reaction—Resultant, and **Coulter's** Principle of Equivalence of Status, we get a **synergic corollary** to the Moral Law that I state as follows:

### ***Wilken's Principle of Synergic Advantage***

When the participants in a unity relate synergically as **equals**, they will maximize the synergic gain. When they form a win-win relationship and share the co-Operator's surplus equally, they will maximize the synergic advantage.



<sup>17</sup> N. Arthur Coulter, SYNERGETICS, 1976, *ibid*



The Principle of Synergic Advantage is represented above by the **maximum synergic co-Action** shown in the **gold** color on the Haskell's PCS.

If you sow synergic actions, you will encourage synergic reactions, and reap synergic resultants. Your synergic resultants will be maximized if you treat others equally. Coulter continues:

“Synergy involves the working together of the parts of any complex system; and each person is not only an individual, but a part of the various groups and organizations to which he belongs, and to society as a whole. In the synergic mode of thinking, a human being acts naturally so as not only to achieve his own goals, but also, wherever feasible, to promote the goals of others, with the least impediment to anyone. The **Golden Rule** — “**Do unto others as you would have them do unto you.**” — becomes not a moral commandment to be obeyed, but a natural and logical consequence of his mode of being, as natural as breathing or sleeping.

“The prevailing outlook of a synergic being may be described as one of synergic altruism. He is not selfish, as this is commonly understood, but always considerate of the needs and interests of others, and ever ready to engage in cooperative enterprise. On the other hand, he is not selfless, sacrificing himself needlessly for others; he selects his own goals and pursues them vigorously, overcoming obstacles in his way.”<sup>18</sup>

## ***Jesus of Nazareth's The Golden Rule***

The first formulation of the **synergic corollary** of the Moral Law of Unified Science was:

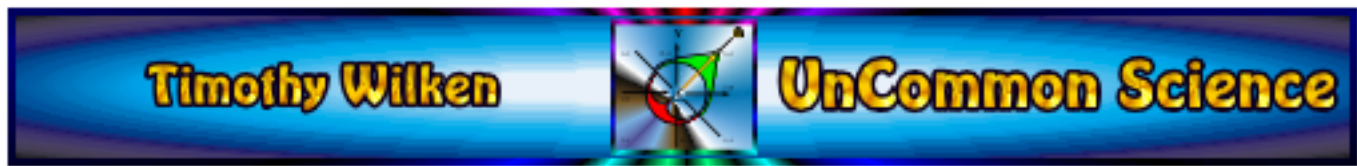
“Do to others what you would have them do to you.”<sup>19</sup>

This formulation is credited to **Jesus of Nazareth** who intuitively discovered the **synergic way** 2000 years ago.

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<sup>18</sup> N. Arthur Coulter, SYNERGETICS, 1976, ibid

<sup>19</sup> **Jesus of Nazareth**, New Testament of the Bible, Matthew 5:9, 5:44



In his sermon on the mount, Jesus of Nazareth taught:

“Love our enemies, do good to them that hate us, bless them that curse us, and pray for them that despitefully use us, I say unto you, that every one who is angry with his brother shall be in danger of the judgement. Go be reconciled with thy brother.”<sup>20</sup>

Jesus of Nazareth may have been the first human to embrace synergy. His words seem to capture the very essence of synergic morality. Synergic morality is more than not hurting other, it requires helping other. Jesus was the first human to state the fundamental law of synergic relationship. It is known as the **Golden Rule**:

“So in everything, do to others what you would have them do to you, for this sums up the Law.”<sup>21</sup>

What would you have others do to you? The best one word answer I can find for this question is **help**. “**Help** others as you would have them **help** you.”

## ***Synergic Morality—helping***

Confucius 579-471BC is credited as the author of the **negative form** of the **Golden Rule**:

“Do not do unto others what you would not want others to do unto you!”<sup>22</sup>

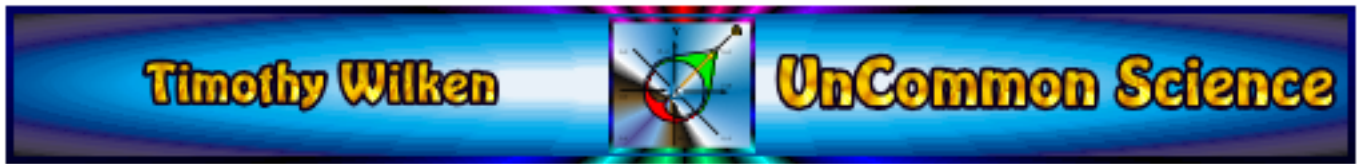
“This negative form of the “golden rule” is next found in the Jewish Book of Tobit 4:15 from the Old Testament Bible (3rd Century BC): “And what you hate, do not do to anyone.” It is also found in the writings of the Jewish scholars Hillel (1st century BC) and Philo of Alexandria (1st centuries BC and AD), It occurs in the 2nd-century documents Didache and the Apology of Aristides. It also appears in the writings of Plato, Aristotle, Isocrates, and Seneca.”<sup>23</sup>

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<sup>20</sup> **Jesus of Nazareth**, New Testament of the Bible, Matthew, ibid

<sup>21</sup> **Jesus of Nazareth**, New Testament of the Bible, Matthew, 7:12

<sup>22</sup> **Chu Hsi**, The Analects of Confucius (15:23), 1190AD, *ENCYCLOPÆDIA BRITANNICA*, [www.britannica.com](http://www.britannica.com), 2000



We can restate this a little more clearly as:

“Do not do to others what you would have them not do to you.”

What would you have others not do to you?

Here the best one word answer is **hurt**. “Do not hurt others as you would have them not hurt you.”

The negative form of the Golden Rule is true and correct as far as it goes. In fact, it is the underlying premise for the Neutral Morality found in the western world today.

But, Synergic Morality requires more of us than simply not hurting. It requires more of us than simply ignoring others. It requires us to **help** others—to **help** each other.

**Jesus of Nazareth** understood this on the deepest of levels. He called for more than a prohibition against hurting others. He ask all humans to **help** each other.

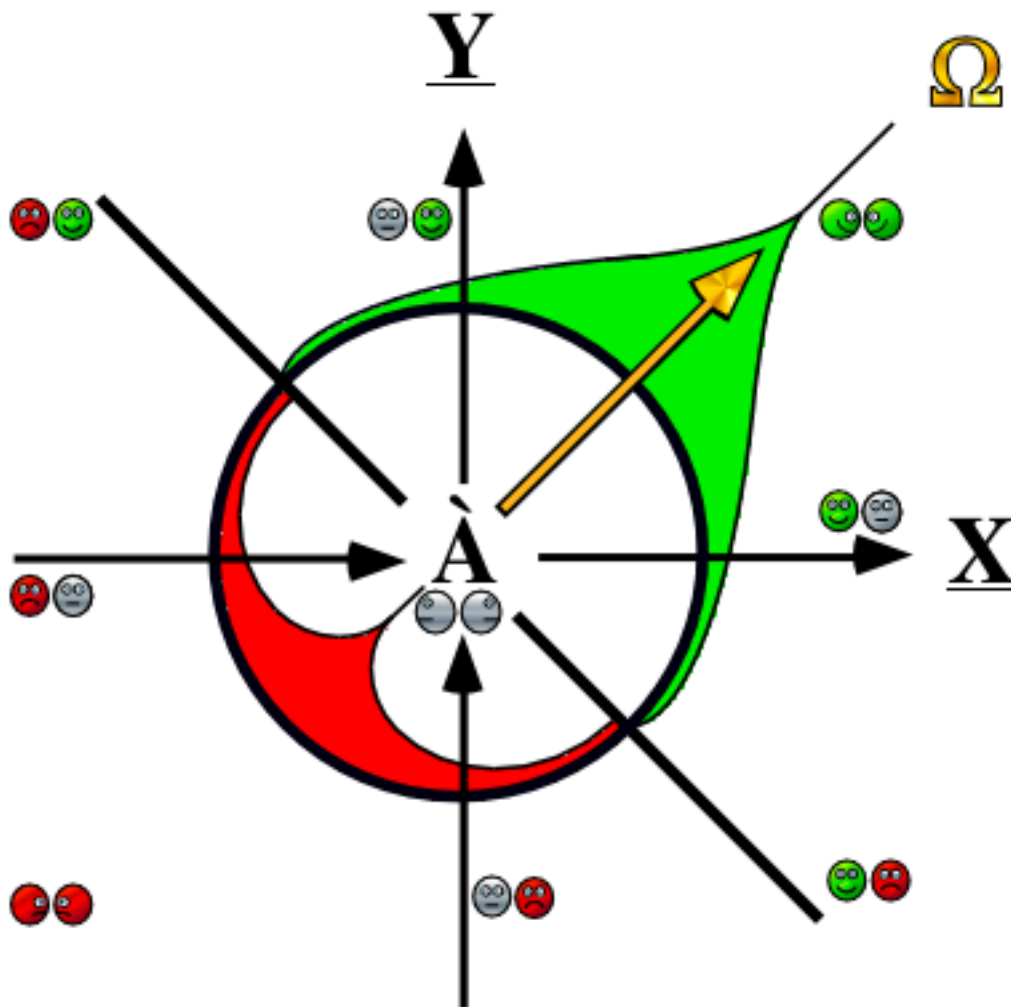
Synergic Morality rests then on the premise—that when you **help others**, you will find yourself **helped in return** — “As ye sow, so shall ye reap.”

Thus the maximum synergic co-Action of the Principle of Synergic Advantage as plotted on the PCS is a scientific representation of the **Golden Rule**.

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<sup>23</sup> **ENCYCLOPÆDIA BRITANNICA**, 2000, *ibid*

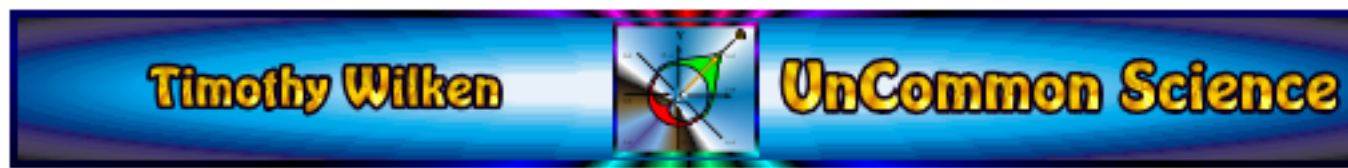




Synergic Morality is **more** than the absence of hurting. It is the **presence** of helping.

All 'wholes-parts' in space-time have substance and form. The substance is matter-energy, and form is the order, structure, organization, and pattern of that matter-energy. Within in any 'whole-part' order can be increasing — **syntropy**, order can be decreasing — **entropy**, or order can be stagnant — not changing — **atropy**. Syntropy and entropy are compliments. They complete each other.

Universe is the result of synergy, adversity, and neutrality.



## ***About Edward Haskell***

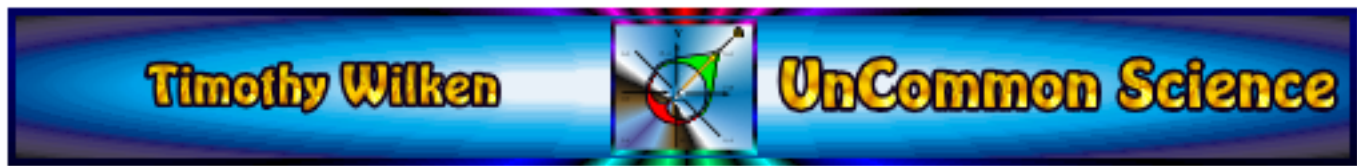
Edward Haskell is one of the least known of the synergic scientists whose ideas and works are presented throughout the UnCommon Sense—Library. One can find information on the internet and elsewhere on Alfred Korzybski, Buckminster Fuller, Arthur Young and N. Arthur Coulter. But, you will find almost nothing on Edward Haskell. For this reason, I am including some biographical information on Haskell.

Edward Fröhlich Haskell was born in Plovdiv, Bulgaria on August 24, 1906 into a large family of well educated Swiss missionaries. During his childhood, the family traveled widely throughout Europe. and Haskell learned to speak six languages.

The family eventually immigrated to the United States. Haskell finished his education here graduating from Oberlin College with an A.B. in 1929. He did postgraduate studies at Columbia University for one year 1929-30, then left school to travel and write a book. While waiting to get his book published, he returned to postgraduate studies at Harvard University 1935-37, University of Chicago 1937-40. His book, Lance — A Novel about Multicultural Men, was finally published in 1941. He became a fellow at University of Chicago from 1940-43, but never completed his thesis and was not awarded a Doctorate degree. He left University to teach, and he instructed in sociology (human, animal, plant) and anthropology, at the University of Denver 1944-45, and Brooklyn College, 1946-47. In 1948, he left teaching to devote himself full-time to private research.

Haskell was instrumental in the formation of the Council for Unified Research and Education (C.U.R. E., Inc.). This was a private non-profit research organization of scientists committed to the unification of science and education. Their goal was the synthesis of all knowledge into a single discipline. Haskell served as the Chairman of C.U.R. E., Inc., from its inception in 1948 until it was disbanded in the mid 1980s.

The groups membership varied over the years, but was made up of many notable scientists and thinkers including Harold Cassidy, PhD, Professor of Chemistry at Yale University; Willard V. Quine, PhD, Professor of Philosophy at Harvard University; Arthur Jensen, PhD, Professor of Psychology at the University of California at Berkeley; and Jere Clark, PhD, Chairman of the Department of Economics at Southern Connecticut University.



The scientists of C. U. R. E., Inc. believed that the present universities were really **multiversities**, with specialists from different fields dividing knowlege into separate preserves with specialized languages and almost no communication between them. They were convinced that this **division of knowledge** played a large role in the **division of the modern world**.

Over the years this group created a body of work that became known as The Unified Science. The Unified Science was to be nothing less than the Assembly of the Sciences into a Single Discipline with a common language. While many made contributions, it was Haskell that was the guiding force and author of the majority of seminal concepts.

Haskell presented The Unified Science at seminars and short courses at Columbia University, West Virginia University, Southern Connecticut State College, and Drew University New School for Social Research. The Unified Science reached its peak of influence in 1972, which was marked by the publication of FULL CIRCLE — The Moral Force of Unified Science<sup>24</sup>

I first learned of Edward Haskell while attending a General Semantics Seminar at North Adams State College in Massachussetts in August of 1981. General Semantics is the term chosen by Alfred Korzybski to represent his Non-Aristotelian System of organizing knowledge. The foundation for General Semantics can be found in Korzybski's book Science and Sanity<sup>25</sup>.

One of the faculty for the General Semantics seminar was a Dr. Donald Washburn, a professor of English at North Adams State College. On the second day of the seminar, he gave lecture on Haskell's PCS.

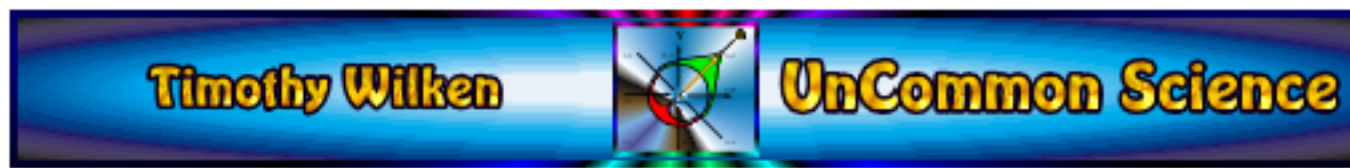
The General Semantics seminars were very special experiences with students and faculty working very closely together, Dr. Washburn and I struck up a quick friendship and towards the end of the seminar he gave me several books, one of which was Haskell's Full Circle.

A month after the seminar, I successfully tracked down Haskell who was living in New York City, and we began a letter correspondence.

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<sup>24</sup> **Edward Haskell**, FULL CIRCLE: The Moral Force of Unified Science, Gordon and Breach, New York, 1972

<sup>25</sup> **Alfred Korzybski**, Science and Sanity, The Colonial Press Inc., Clinton, Mass., 1933-1948



Haskell had become aware of synergy and its importance in the late 1930s, and the concept was incorporated deeply into the Unified Science and the Periodic Coordinate System.

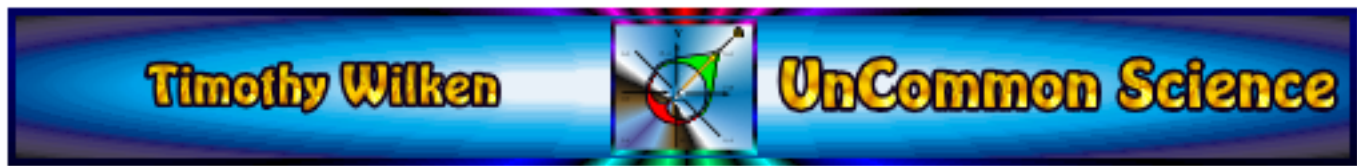
In 1982, I was in New York City to attend an unrelated medical seminar, and took the opportunity to visit Haskell in person. He was 76 years old and living alone in a small “student” apartment on the East River near Columbia University. His tiny apartment was filled from floor to ceiling with books and papers. There was no room to even sit down, let alone accomodate guests. Haskell enjoyed being near the active academic community at Columbia University. He met and communicated with students and faculty in the coffee shops and resturants that surrounded Columbia. He was close friends with several faculty members at Columbia including the internationally respected Chairman of the Department of Anthropology. While Haskell was never on the faculty at Columbia himself, his faculty friends occasionally arranged for him to present classes and short courses at Columbia on his Unified Science.

I next visted Haskell in the spring of 1984. This time I stayed at the home of his friend, the Chairman Emeritus of the Department of Anthropology at Columbia University, I am sorry to say I don’t recall his name. Over the next two years, Haskell and I would exchange occasional letters.

In early 1986 at age 79, Haskell suffered a stroke. When he was released from the hospital, he could no longer care for himself and had difficulty speaking. His family quickly decided to put him in a nursing home and throw his life’s work — all his papers and books — into the city dump.

As you can imagine, this caused him great emotional stress. He knew I was sensitive to the value of his work and so he begged his brother to call me. Fortunately, I was able to intervene and I did. My wife and I invited Ed to come and live at our home in California. He arrived a month later early in the summer of 1986.

A few weeks later, I recieved a shipment from his brother of forty boxes containing all the scientific papers and books from his apartment. Haskell lived with us for about three months, he rapidly regained his strength and began recovering his ability to speak. And, though he did made significant improvement, he was a shadow of the former master scientist I had visited in New York two years earlier.



In the fall of 1986, he felt well enough to return to New York to spend some time with his friends and those few family members who cared about him. He asked me to keep his papers and books safe until he could find a place for them. He hoped to find a University library willing to accept custody of them. To a large extent this was wishful thinking for Haskell was not well known, and fewer still valued his work. Haskell celebrated his 80 birthday with friends in New York, and shortly after that suffered yet another stroke and died.

By default, I became the final custodian of all of Haskell's scientific papers. FULL CIRCLE — The Moral Force of Unified Science has been out of print for many years. I have managed to find a copies. The greater part of The Unified Science remains unpublished.

I believe Haskell's work is important to synergic science and to humanity.

The systems hierarchy which he presented in his Unified Science has probably been done better in Arthur Young's Theory of Process. Much of his work that focused on cybernetics and general systems theory has been done elsewhere equally well or better (Bertalanffy, et. al.). But he still made several unique contributions to human knowing:

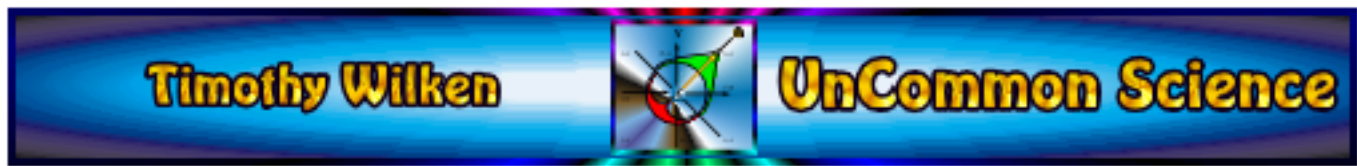
1) **The discovery of the 9 Co-Actions.**

2) **The discovery of three classes of relationships.** Prior to Haskell, Neutrality simply represented the boundary between Adversity and Synergy. Haskell recognized that the Neutral class of relationships, in and of itself, was of equal importance to both the Adverse class of relationships, and the Synergic class of relationships.

In effect, Haskell discovered Neutrality. If we are to build a synergic future, we will not only have to transcend the Adversary Way, we will also have to transcend Neutrality as well. I think this is one of the major difficulties humans face today in understanding three-fold nature of relationships. Because Neutrality is invisible in our paradigm of human relationships, most individuals assume if they are not Adversaries they must be Synergic. The same old Either/Or scientific mistake.

3) **The invention of the Co-Action Compass or PCS.** This at first appears abstract and mathematical, but once understood is a powerful reflection in one diagram of all **three** classes of relationship.





Haskell's focus was on evaluating **adversary**, **neutral**, and **synergic** relationships between all stages of process. Much of his work was on relationships between particles, atoms, molecules, bacteria, plants, and animals. The PCS allowed him to plot the resultants of all **three** types of relationship on a single geometric grid.

The shape of the PCS was not invented by Haskell. The shape evolved and took form from the **real** data that was measured **extensionally**, and plotted from analyzing numerous relationships between particles, atoms, molecules, bacteria, plants, and animals. The term extensional here is borrowed from Korzybski to mean from the real world.

Haskell did not study or analyze human relationships, but he predicted that the PCS would be useful in analyzing adversary, neutral, and synergic relationships between humans and groups of humans, and finally.

4) **The Moral Law of the Unified Science** — Much more important than Haskell's recognition of the importance of the spiritual truth "**As you sow, so shall you reap**," was his restatement of this truth as a scientific law of Nature that applied in all seven stages of process—light, particle, atom, molecule, plant, animal and human.