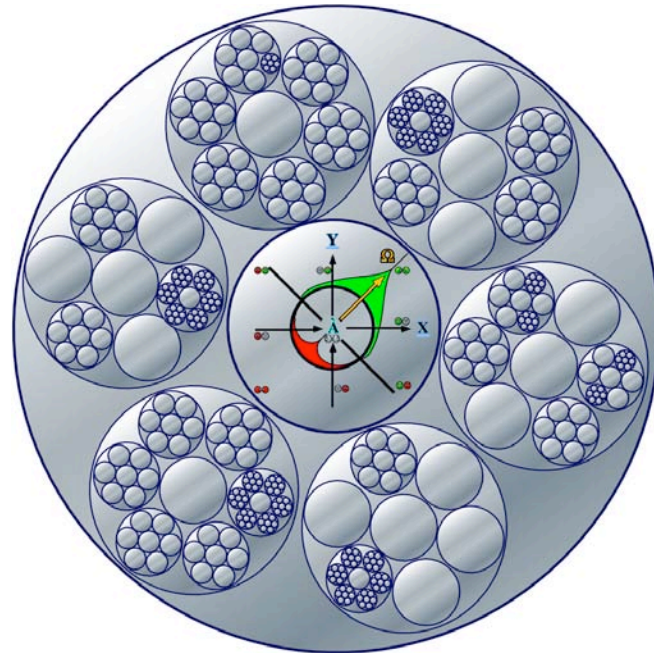


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Synergic Science

Synergic Science is the study of how systems *work together* — physical systems, biological systems and social systems.

This involves a careful study of the relationship of the "parts" of a system to the "whole" of the system.

“Synergy means behavior of whole systems unpredicted by the behavior of their parts taken separately. ... Synergy is the only word that means this. The fact that we humans are unfamiliar with the word means that we do not think there are behaviors of "wholes" unpredicted by the behavior of "parts".”

—R. Buckminster Fuller

Synergic Science makes much of the relationships between the "parts" and their relationships to the "whole". For human beings there can be no other more important "parts" than *Self* and *Other*.



From my perspective I am *self* and you are *other*, but from your point of view you are *self* and I am *other*. This is a very simple way of looking at things.

“Universe to each must be, all that is, including me.
Environment in turn must be, all that is, excepting me.”

—R. Buckminster Fuller



Other is included in Fuller’s definition of *environment*.

Other is that component of environment that is not me.

All relationships are then really between *self* and *other*.

These include physical, biological and human *selves* and *others*.

“Reality is best understood as a side-effect of the relationship between self and other.”

—Judy Wilken



My *actions* plus your *reactions*, and your *actions* plus my *reactions* result in our mutually experienced **reality**.

Reality is Personal, Local & Immediate

Reality is *personal*. Because reality is generated between self and other—it is happening between you and me, between me and you, and it is absolutely effecting both of us.

Reality is *local*. It is happening wherever you and I are. Yes, there is reality in downtown San Francisco, and there is reality in New York City. But for each of us, reality is right *here*.

Reality is *immediate*. It is happening right *now*.

Control of Reality is Shared

If I raise my voice and start yelling, won't you notice that your reality is suddenly LOUDER?

If I start pumping hostility into our shared reality, you *will* feel that hostility. You may even react and pump some hostility yourself.

If I start pouring friendliness into our shared reality, then chances are you will respond to that friendliness and we will both find that reality is more pleasant.

Everyone you meet has some control over your life.
Anger them at your own peril.

Relationship in a Shared Reality

In a shared reality, our relationships with each other really matter. Many of our favorite beliefs about ourselves may prove to be untrue.

Are we really *separate* from each other?

Are we really *independent* of one another?

What does *freedom* mean in a truly shared reality?

The Myth of Independence

Take a moment to examine the contents of your pockets or purse

Can you find any item there, that you obtained without the help of someone else?

Did you make the clothes you wear? Did you grow the food you eat, or manufacture the tools you use.

Can you find anything in your environment that was obtained without the help of someone else? Do you know the names of the individual who made the things you use?

I am not talking about ownership here. I will grant that you own your possessions. But would you have them if they had not been for sale. Nearly everything modern humans possess was obtained with the help of others.

I Depend on Others

As I examine my world I discover that I depend on others to grow and produce my food. I depend on others to design and build my home. I depend on others to generate my electricity. I depend on others to supply my water. I depend on others to deliver my mail. I depend on others to educate my children. I depend on others to entertain my family. I depend on others to manufacture my automobile. I depend on others to refine the gasoline for my car. I depend on others to care for my family when we are sick. I depend on others to protect us from crime and war.

I depend on others to ...

I depend on others ...

I depend ...

Human INTERdependence

Human INTERdependence is made less visible by our present economic exchange system. I go to work and help my employer. He depends on me. At the end of the month he pays me for my help. I depend on him. I can then take some of the money from my paycheck to pay my house rent. While I depend on my landlord for the roof over my head, he depends on me to pay the rent promptly.

Sometimes I depend on others and sometimes others depend on me. When we buy and sell in the economic marketplace we are really exchanging help. When I help others they owe me. When others help me I owe them. Money is just the present accounting mechanism we use to settle up.

Arthur Noll

“People are interdependent, social beings. We do not, and cannot, live as the independent tiger, or orangutan, coming together only to mate briefly, all child care and education provided by the mother. ...

“Can you manage to clothe and feed and shelter this body, with no hands touching any article except your own hands? If you can make your own tools and live independently for just a few weeks or months, this is interesting, but of course real independence would be a lifetime of this, a reproducing lifetime, so it does fall considerably short of the mark.”

Why INTERdependence?

When a task is larger than the abilities of a single individual it requires co-Operation. If you want to lift a thousand pound sofa you will need help. Two individuals working together can accomplish more than one individual working alone. One thousand individuals working together can accomplish much more than any individual working alone. ...

For humanity, our choice was simple. Become INTERdependent or retain the quality of life of the plants and animals. Our mothers and fathers, our grandmothers and grandfathers, our great grandmothers and great grandfathers – they have already made the choice for us. We modern humans are bound together in total INTERdependence – this means we are totally dependent on each other. Whether we like it now or not, really doesn't matter. Look in your pockets, we can't go back 10,000 years now.

We Humans Need Each Other

INTERdependence means all humans need help. This is important enough that it can not be said too often. All humans need help unless they wish to live at the level of animal subsistence. INTERdependence means sometimes I depend on others and sometimes others depend on me.

Sometimes self is a giver of help. Sometimes self is a receiver of help. Sometimes other is a giver of help. Sometimes other is a receiver of help.

Sometimes my actions help others meet their needs.
Sometimes other's actions help me meet my needs.

Relationship is Critical



Once we understand four ideas —

that reality is generated at the interface between self and other,
that reality is personal, local, and immediate,
that control of reality is shared,
and finally that humans are an INTERdependent class of life,

then we discover that the ***relationship between self and other*** determines everything in our lives.

The Relationship Continuum

From the point of view of the individual joining in relationship, I can be hurt, I can be ignored, or I can be helped by the relationship—there are only *three ways*.

Relationships that **hurt** are **adversary**.

Relationships that **ignore** are **neutral**.

Relationships that **help** are **synergic**.

Therefore all human choices and all human relationships can be described as falling on a continuum.

Adversity — • — **Neutrality** — • — **Synergy**

Adversity — • — **Neutrality** — • — **Synergy**

There are only *three* possible relationships between *self* and *other*, we can **lose**, **draw**, or **win**. A relationship can result in our being **worse off**, in our being **unchanged**, or in our being **better off**. We can choose to **hurt** each other, we can choose to **ignore** each other, or we can choose to **help** each other.

The results of our interactions may be **negative**, **neutral** or **positive**. 1) When we **lose**, we are **hurt** by the experience, and are **less** after the experience than before. 2) When we **draw**, we are **ignored** by the experience, and will be the **same** after the experience as before. 3) When we **win**, we are **helped** by the experience, and are **more** after the experience than before.

If our relationship is **adversary**, then we will **lose**. We will be **less** because of our relationship with each other. We will be **less** happy, **less** effective and **less** productive. Our reality will be hurtful, negative and painful.

If our relationship is **neutral**, then we will experience a **draw**. We will be **unchanged** by our relationship with each other. Our happiness, effectiveness, and productivity will be **unaffected** by our relationship. Our reality will be **ignoring**, **meaningless** and **indifferent**.

If our relationship is **synergic**, then we will **win**. We will be **more** because of our relationship with each other. We will be **more** happy, **more** effective, and **more** productive. Our reality will be **helpful**, **positive** and **pleasurable**.

Adversity — • — **Neutrality** — • — **Synergy**

Truth Lies in Eye of the Beholder

Each participant determines for himself whether a relationship is **synergic neutral**, or **adversary**.

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.

This is determined from his point of view, and he cannot be fooled. True **synergy** exists when *all* participants are **more** happy, **more** effective, and **more** productive.

True **synergy** is **WIN-WIN**.

Three Relationships — Three Strategies

Humans have long ago realized that they are an INTERdependent species.

For most of us, this realization is not conscious. Many of us, if not most of us, hold strong beliefs in our human independence.

But despite our strong beliefs our commitment to the myth of independence is not born out by our behavior.

Adversary INTERdependence

Today, many of us find ourselves in **conflict**. To win in this world, someone must **lose**.

Winning is always at the **expense** of another. If you are struggling to avoid loss, you are not independent.

If you are **hurting** others or being **hurt** by others, you are not independent.

CONFLICT –def–> The struggle to avoid loss – the struggle to avoid being hurt. $(1+1) < 2$

$$1 \text{ Fox} + 1 \text{ Rabbit} = 1 \text{ Fox}$$

Neutral INTERdependence

Today, most of us solve some of problems in the great market.

We seek to earn **money** to meet our needs by selling the hours of our lives. We seek to **purchase** the goods and services we need from others. We seek a fair trade.

And, our trade is fair. By definition, the lunch McDonalds is selling has a **fair market value** of \$5.00. My five dollars has a fair market value of \$5.00. We trade fairly. Economically nothing much has changed for me. I had five dollars in cash when I entered McDonalds, and I left with five dollars worth of lunch. My net worth is the **same**.

Fair Market –def–> The bartering to insure that the exchange is fair – to insure that the price is not too high or too low – to insure that neither party loses. $(1+1)=2$

a \$5 lunch = a \$5 bill (less a little for a **fair** profit)

Synergic INTERdependence

Today, we find synergic relationships within some families, occasionally within small businesses. But, there are no examples of institutionalized or organized synergy.

Co-Operation results when there are no **losers** and no one is **ignored**. When humans behave synergically, they seek their goals and needs as allies rather than as competitors. Human intelligence is most useful when we humans think of ways where all parties can **win** and where there is no need for losers. Synergic relationships can produce **all-win** scenarios.

Co-OPERATION –def–> Operating together to insure that both parties win, and that neither party loses. The negotiation to insure that both parties are helped, and that neither party is hurt. $(1+1)>2$

For the Beatles musical group: $(1+1+1+1) = \$98$ million

Understanding Universe

Relationships occur everywhere in Universe. They exist between every ray of light, every particle of nuclear energy, and all the individual atoms, molecules, plants, animals and humans that make up our world.

Edward Haskell explained that the three classes of relationship—**Adversity**, **Neutrality** and **Synergy** also exist everywhere in Universe, and that these relationships have a strong determining effect on *actions* and *co-Actions*.

Buckminster Fuller explained the relationships between the physical forces in Universe. Two of the forces he studied most carefully were *push* and *pull*.

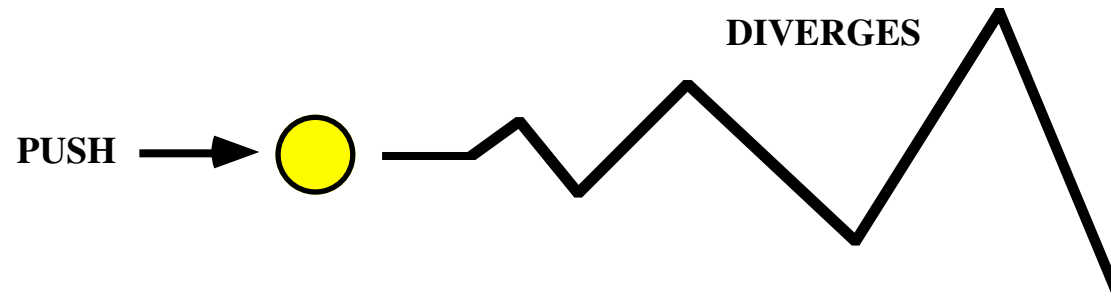
Push and Pull

Let's begin with a lesson on two phenomena found everywhere in physical systems. *Push* and *pull* seem so common and ordinary in our experience of life that we humans think little of these forces. Most of us assume they are simple opposites—*in* and *out*—*back* and *forth*. Forces directed in one direction or in its opposite.

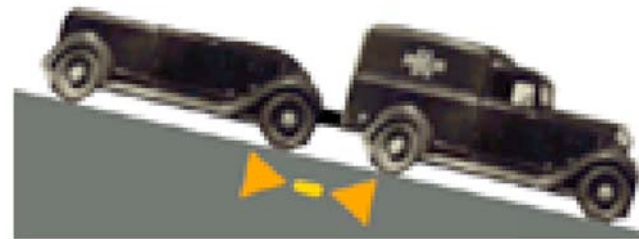


Fuller explained that these fundamental phenomena were not opposites, but compliments that could always be found together. He further explained that *push* is *divergent* while *pull* is *convergent*.

Imagine *pushing* a yellow ping pong ball on a smooth table with the point of a sharp pencil. The ball would always roll away from the direction of the *push*, first rolling one way then the other.



An example from common experience occurs when we are pulling a trailer with our car. If I am driving downhill, the trailer may begin to *push*. This produces a strong side to side force – *divergence*. My trailer will begin to sway from side to side. ***Push is divergent.***



Now imagine the difference, if you attach a string to the ping pong ball with tape, and *pull* it toward you. No matter how other forces might influence the ball to roll away from you, the string would always bring it to you more and more directly.



Now back to our trailer example, when I am driving uphill, I am *pulling* against gravity. The trailer *converges* nicely behind my car. If the trailer begins to sway, I can dampen it by increasing *pull* – simply increasing my acceleration. ***Pull is convergent.***



Tensegrity

Now our understanding that pull is convergent may allow us to congratulate ourselves on being good drivers. What we are observing here are two always co-existing fundamentals of Universe — *Push and Pull* — *Compression and Tension* — *Repulsion and Attraction*.

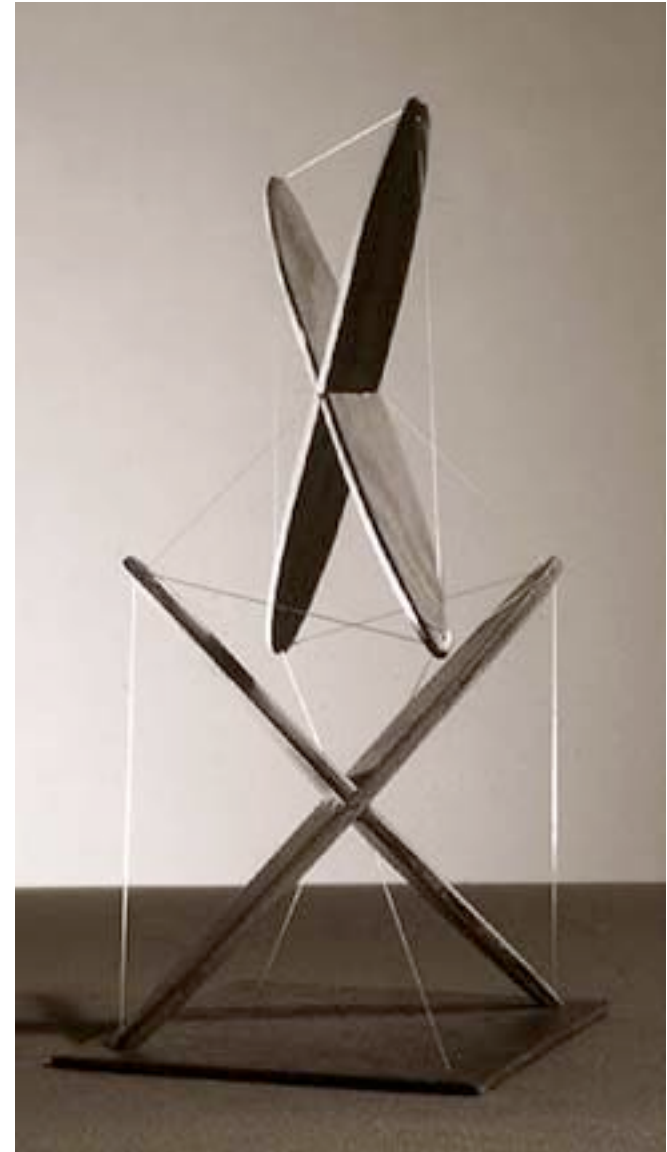
Fuller explained that something even more amazing could happen: “When continuous pull is balanced by discontinuous push a *stabilized system* is produced by the *integrity of tension and compression*.”

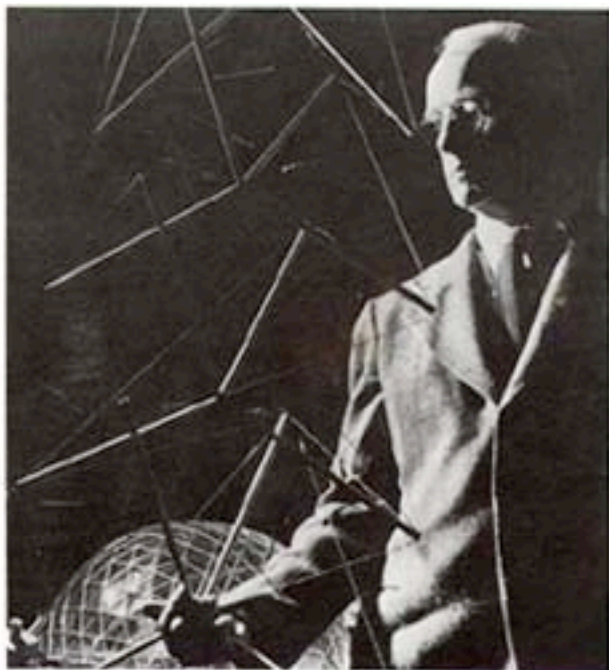
He called this pattern ***Tensegrity***. It occurs when *push* and *pull* have a ***win-win*** relationship with each other. The pull is continuous and the push is discontinuous.

Tensegrity Revealed

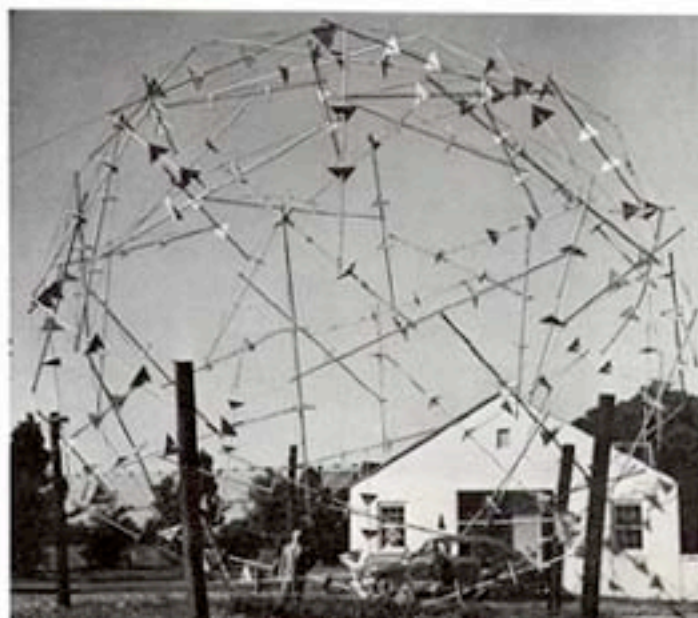
In 1948, a young artist named Kenneth Snelson created a sculpture that would reveal the pattern that came to be called tensegrity.

The wooden X is a *compression* strut held in place by a *tension* cable. A system stabilized by the *balance of push and pull*. The cable is in *continuous tension*, the wooden struts provide *discontinuous compression*.





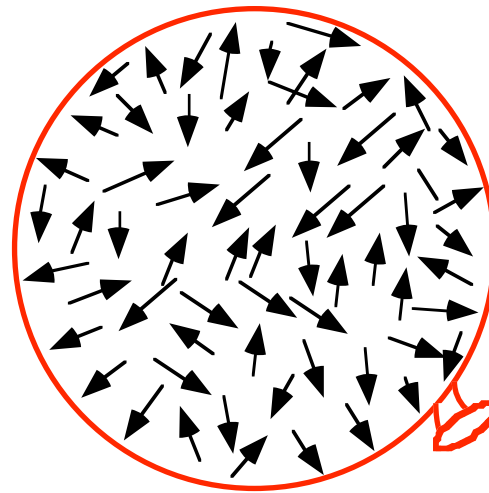
R. Buckminster Fuller



A common example of a *tensegrity* is a child's balloon. When we examine an inflated balloon as a system, we find that the rubber skin of the balloon *continuously pulls* while the individual molecules of air are *discontinuously pushing* against the inside of the balloon keeping it inflated.

**Molecules of air
discontinuously pushing
against the continuously
pulling rubber skin of the
balloon.**

**Tensegrity — a balance of
continuous pull and
discontinuous push.**



All external forces striking the external surface of our balloon are immediately and continuously distributed over the entire system. This makes the balloon very strong. We all know how hard it is to break a good balloon with a blunt blow.

The Power of Tensegrity

The automobile tire is one of the strongest most durable inventions in the history of humankind. And few of us are aware that it is a tensegrity. It is the power of tensegrity in each tire that protects us from failure and blowout despite high speeds and long miles.

A **tensegrity** then is any balanced system composed of two elements — a **continuous pull** balanced by **discontinuous push**. When these two forces are in balance a stabilized system results that is **maximally** strong. The larger the system the stronger the system.



Biological Tensegrities

Within both animal and human bodies we find that the muscle-skeletal system is a tensegrity of muscle and bone, the muscle provides continuous pull, the bones discontinuous push. The forces between the bones and muscles are held in constant balance. This forms the basis for all of our physical mobility.

The central nervous system also functions as a tensegrity. The sensory-motor system is a tensegrity of sensory neurons and motor neurons. The sensory neurons always sensing information – continuously pulling and the motor neurons only occasionally involved in some motor action – discontinuously pushing.

Living Tensegrities

Plants – Classified by Korzybski as *energy-binders* have their primary relationship with the sun. Their leaves are *continuous pulling* as they collect solar energy from the sky, but with the rotation of the earth and changes in the weather the sun only *discontinuously pushes* its radiation on to the leaves.

Photosynthesis-Radiation is the *energy-binder* or plant tensegrity.

Animals – Classified by Korzybski as *space-binders* are often fighting or fleeing. They are generally limited to two roles either as prey or as predator. The prey animals are *continuous pulling* predators to them. While the predators are only occasionally hungry. They *discontinuously push* out seeking the occasional kill. Prey and predator must be in balance to stabilize the ecosystem. The larger the ecosystem the more stable it is.

Prey-Predator is the *space-binder* or animal tensegrity.

Human Tensegrity

Humans – Classified by Korzybski as *time-binders* have the power of understanding. We develop understanding through education. The two roles of humans can then be seen to be Student and Teacher. I am continuously learning – *continuously pulling* in new information, but I am only occasionally teaching – *discontinuously pushing* out information to someone else.

Student-Teacher is the *time-binding* or human tensegrity.

Needs-Actions: Survival Tensegrity

The main task of all living organisms is survival. Needs are *continuously pulling* on all living organisms to be met. To meet its needs, the living system must take action. Fourteen to Sixteen times a minute, I take a breath. Many times a day, I drink water. And two or three times a day, I eat food. My *actions are discontinuous*. Discontinuous means I have some control over when I act to meet my needs. I can eat now or a few hours from now. Survival for life forms can be described then as the process of continuous needs being met by discontinuous actions.

Life and living then is all about the continuing pull of our *needs* and the discontinuous push of the *actions* we take to meet those needs.

GIFTegrity & ORTEGRITY

We will revisit the structure of tensegrity in the next two presentations.

First, I will be discussing the use of a *gifting tensegrity* to form the basis for a gift economy. By now you might have an understanding as to why we humans might choose such an economy in the future. As an INTERdependent species living in a shared reality, we will need something better than the neutrality of market capitalism.

In the third presentation, I will discuss using an *organizational tensegrity* as the basis for creating human organizations for economic production and industry. This too will offer something far beyond the best that corporate capitalism offers today.

But last for today, let's look at the *future of community*.

Building a Synergic Future

Synergy literally means "working together", operating together as in Co-Operation, laboring together as in Co-Laboration, acting together as in Co-Action.

The goal of synergic union is to accomplish a larger or more difficult task than can be accomplished by individuals working separately. By *working together*, we can insure that everyone wins, and that no one loses — we can insure that everyone is helped, and that no one is hurt.

A synergic human seeks a world that works for each of us and for all of us. This includes all living things and the very Earth itself.

WIN-WIN-WIN-WIN

Building Synergic Community



Building synergic community involves a relationship between *self* and *other*. It would see obvious that that relationship should be *synergic*. Building such a community will require looking out equally for all the *parts* of the *whole*. For all *selves*, for all *others*, and for the *community* itself as a *whole*.

Requirements

1) Commitment,

2) Unity

3) Working together.

Commitment Defined

the will to stay the course

the act of binding yourself (intellectually or emotionally) to
a course of action

–WordNet

an agreement or pledge to do something in the future

–Merriam-Webster

synonyms: allegiance, loyalty, dedication

Self Commitment

To protect your self

To meet your personal goals

To obtain your personal needs, wants, and desires

Other Commitment

To our family — nuclear family — mother, father, and their children;
extended family — grandparents, aunts, uncles, cousins, etc.

To our organizations

To our communities

To humanity as a whole

To all Life on the Earth, and and even Universe itself ...

Unity Defined

being one

a condition of harmony; continuity without deviation or change (as in purpose or action); the quality or state of being made one

–Merriam-Webster

synonyms: oneness, wholeness, integrity, and unification

Working Together

To protect your our selves *as* individuals *and as* community

To meet our goals *as* individuals *and as* community

To obtain our needs, wants, and desires *as* individuals *and as* community

Committed Unity

CommUNITY

CommUNITY

Synergic science is creating powerful tools for those humans who desire the power of synergic organization and are willing to form CommUNITY – a truly *co-Operative* and *unified* community.

CommUNITY is more than a collection of individuals. It is a group of anywhere from two to seven billion humans who are connected by synergic relationship, and *committed* to solving their problems and meeting their needs by *working together*. They view themselves as a *Unity*.

Once such a group has decided on their own unique common purpose and mission, come to agreement as to the common goals and needs that unite them, then they can use the new tools of synergic organization to significantly leverage their efforts in obtaining those goals and needs.

