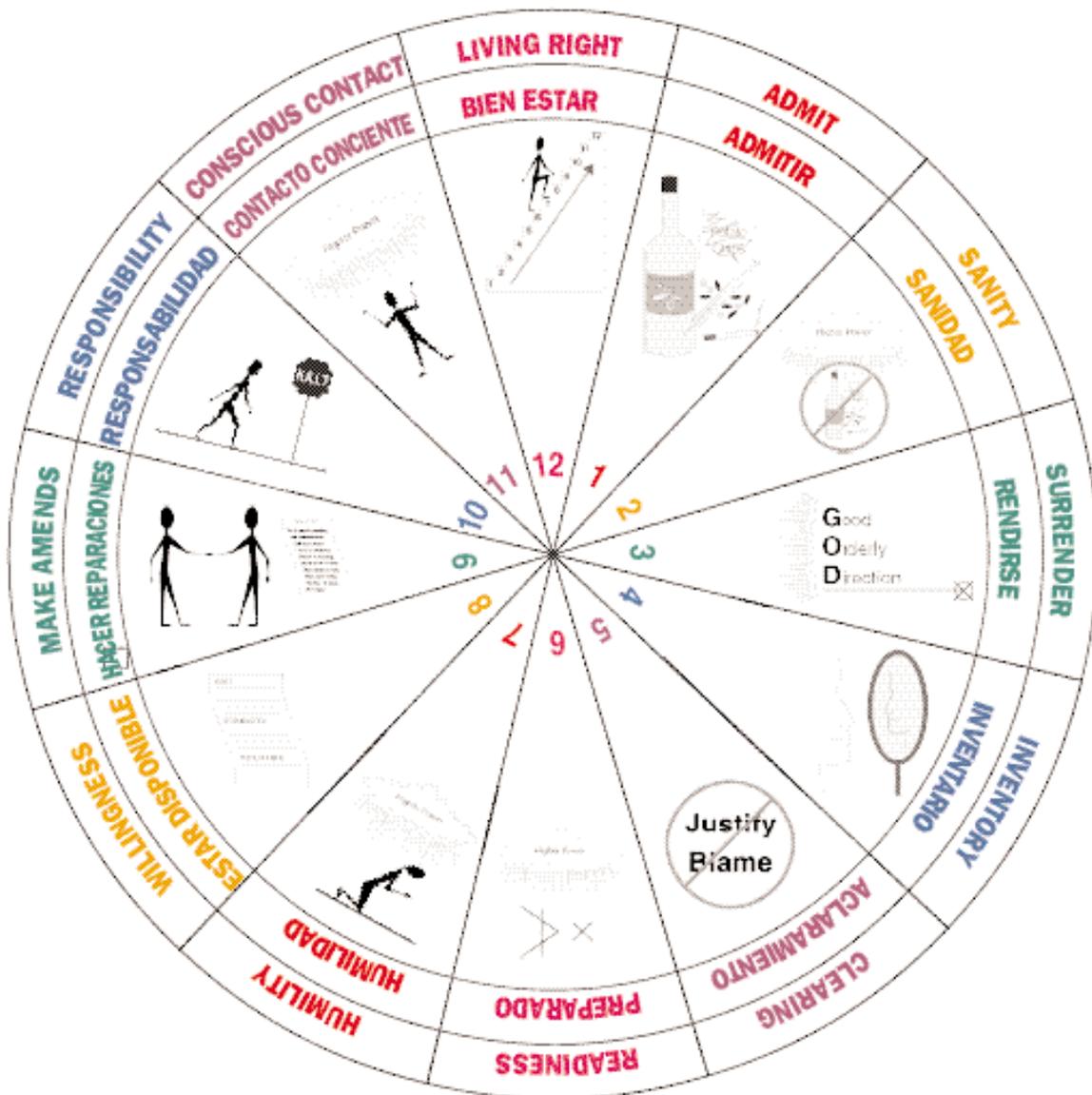


# 12° OF FREEDOM

Synergetics In Addictions Treatment



Chapter III: 12° of Freedom: Synergetics in Correctional Treatment, explores the questions:

*What does the discipline of Synergetics have to contribute to the treatment of addicts and offenders? How does Synergetics relate to the 12 Steps to Recovery of Alcoholics Anonymous and Narcotics Anonymous?*

This chapter defines and discusses the *six positive and six negative degrees of freedom* and the Tetrahedron, *the minimum structural system in universe*. Each of the 12 Steps to Recovery are related to the 12° of Freedom as *special case truths* of the *generalized principles* operating in Universe. Further evidence that these *generalized principles* are *always and everywhere true* is presented in an overview of the 12 Stages of Healing.

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## THINKING OUTSIDE OF THE BOX

*“THE DARK AGES STILL REIGN over all humanity, and the depth and persistence of this domination are only now becoming clear.*

*This Dark Ages prison has no steel bars, chains or locks. Instead, it is locked by misorientation and built of misinformation. Caught up in a plethora of conditioned reflexes and driven by human ego, both warden and prisoner attempt meagerly to compete with God. All are intractably skeptical of what they do not understand.*

*We are powerfully imprisoned in these Dark Ages simply by the terms in which we are conditioned to think.”<sup>1</sup>*

This introduction to R. Buckminster Fuller’s last book, COSMOGRAPHY: A Posthumous Scenario for the Future of Humanity,<sup>2</sup> offers both a challenge to readers to think for themselves about issues with which they are confronted, and introduces a blueprint for discovering solutions to increasingly complex problems. It is particularly compelling to an educator who has worked in the prison system for more than 27 years, with actual *steel bars, chains ... locks, jailers, wardens and prisoners*.

Although *the depth and persistence of Dark Ages thinking* is largely unconscious due to habit, nowhere is it more apparent than in prisons, as much in this country as in the rest of the world. The walls, fences, *steel bars, chains* [and] *locks* are physically present as reminders of the universally held, reflexive belief in the need to punish offenders, to provide an illusion of safety in a society *conditioned to think* in terms of “us vs. them”, “good vs. evil” and the racial divisions and class systems that separate the “haves” from the “have nots.” The model presented here challenges assumptions, the *terms in which we are conditioned to think* about addicts, criminals, their origins, how “they” got “that way,” and why and how they should be punished. Chapter II: Every Day In America explored these assumptions. This chapter presents an alternative to traditional interventions.

Society has been *conditioned to think* that offenders belong in prisons. As discussed in

the previous chapter, each individual has a very definite opinion of who “they” are, and is not conscious of the *misorientation and ... misinformation*, the prejudice, that blinds them to the facts about who goes to prison or what happens while “they” are there. Society has been *conditioned to think* in terms of punishment as a *solution* for wrongdoing through centuries of philosophical, religious and moral instruction.

There is no argument that there are those who cannot live in society without causing devastating harm to others. Prisons do seem to offer some measure of safety for larger society. As a “solution” to the problem of crime however, the old systems have fallen sadly short of the stated goals of providing “public safety.” The last few years, with teenagers and younger students shooting schoolmates and those in their church groups, and lone, young, white, male, predators killing in dramatic, murderous sprees or in serial savagery, all while an unprecedented escalation in the number of prison beds increases daily, should offer some hint that continuing to incarcerate young, largely African-American and Hispanic, non-violent drug offenders has not offered a viable solution to the terrible violence plaguing the United States today.

From the early days of death and exile as solutions, to the more humane penitentiaries developed by the Quakers, in the “City of Brotherly Love,” (Philadelphia) to prisons, and in this century,—correctional facilities—well meaning, well intentioned, serious philosophers and criminologists have attempted to develop approaches to dealing with the more troubled and troubling of society. Here is offered a perspective on incarceration, the keepers and the kept. This chapter describes the basis of a synergistic approach to “corrections” in the 21<sup>st</sup> Century. It describes and defines the principles and methods influencing the development of a comprehensive approach to treatment from the perspective of Synergetics, the generalized systems theory developed by R. Buckminster Fuller, world-famous inventor of the Geodesic Dome.

The physical and metaphysical underpinnings of the 12 Steps to Recovery, a comprehensive system for dealing with addictions, is explored from the scientific perspective of the Universal Principles detailed in Fuller’s *Synergetics, Volumes 1 and 2*, and others of Fuller’s works.<sup>3</sup> The wholistic approach to intervention with offenders presented here was developed through focused study of successful models of change, integrated through *experienced based knowledge* in the field,

and expanded over the course of more than 34 years in human services and the criminal justice system. The results gained through this approach to working with young, non-violent offenders are provided as evidence for the effectiveness of a synergetically based approach to the whole person.

The systems described here parallel and reflect the basic Universal Principles, “*always and everywhere true*” discovered by R. Buckminster Fuller in the course of his more than 56 years of work and study of the principles existing in nature. Fuller said that Synergetics was not invention, but discovery of how nature works. The study of Fuller’s work has made it possible to develop effective tools and artifacts to improve the quality of life for those affected by the criminal justice system: offenders, staff, and the people close to them, as well as the larger society impacted by the system. The comprehensive approach to treatment of addictions discussed here was initiated in the New York State Department of Correctional Services (DOCS) in 1979,<sup>4</sup> greatly expanded beginning in 1987, culminating in an accelerated learning curriculum developed for addicts and treatment professionals, DOING LIFE! A Life-Skills Approach to Recovery from Addictions<sup>5</sup> and, most recently, a guidebook on decision making called S.M.A.R.T. CHOICES: Accelerated Life Skills for Making Decisions That Work.<sup>6</sup> Illustrations and exercises from these two books and their Facilitator’s Guides<sup>7</sup> are used throughout this document as examples of accelerated learning techniques successfully employed in the programs and curricula presented here.

Examples from treatment programs, “*total learning environments*” [TLE™] in which these methods were developed and tested are also presented as illustrations of application and effectiveness.<sup>8</sup> Initiating and maintaining these Total Learning Environments™ has not always been an easy task. The “rules” for working with offender populations are based in a long-standing tradition of punishment, reform and rehabilitation. The operating assumptions about offenders from which society and even corrections professionals have been *conditioned to think* often blind people to the possibilities for change in this system. As in any system based in long-standing tradition, newcomers, both staff and inmates, are taught, *what* to think, to follow the rules. To implement change in any system as tradition-bound as corrections requires great patience and fortitude. The programs here challenge the *terms in which we are conditioned to think*. Their purpose is to

teach people **how** to think, clearly and effectively, **how** to set goals and accomplish them.

It is a massive undertaking, requiring a comprehensive, carefully implemented plan, and intensely focused effort. The work described here could not have been accomplished without the commitment of hundreds, now thousands, of corrections professionals and other educators who learned, joined in and supported the implementation of the models presented.

Two of the primary TLE™ offered as examples of significant success are the Shock Incarceration program, a six-month, intensive substance abuse treatment program for young, (16 to 39) non-violent offenders, based in a military model, operating in four correctional facilities in New York; and the Willard Drug Treatment Campus, [DTC] a 90-day relapse recovery, correctional drug treatment program for second felony drug offenders and parole violators, also in New York State DOCS.<sup>9</sup> The DTC has no upper age limit. Both of these programs are based on the Network Program, the first TLE™, developed in 1977 and 1978 and implemented in 1979.

Both Shock Incarceration and the DTC include men and women offenders, and both programs have intensive substance abuse treatment as the primary focus. Many offenders going through the Shock Incarceration and Willard DTC programs increase academic scores of up to 4 and 5 years in three to six months, and a significant number earn General Educational Development (GED) certificates prior to release. The average increase in academic scores in these two programs is 2.5 years for all offenders, after only 144 [DTC] or 275 hours [Shock Incarceration] of academic classes. These programs have the highest GED acquisition rates in correctional programs in the country, with an average of a more than 83% passing rate among those who qualify to take the test.<sup>10</sup> The unique, whole-brain, accelerated learning context discussed here and used so successfully, “holds the space” for this work. It excites, motivates, and inspires people to personal growth, leading to results unprecedented in the field.

The programs and curricula offer structure and strategies for enhancing and improving the quality of life of those struggling with the ravages of addiction, and thinking limited by marginal education and physical and/or emotional deprivation. The premise is that these are primary factors that contribute to criminal behavior. The operating definition used here is,

*“criminal behavior is one manifestation of a functional deficit in decision making ability.”*<sup>1</sup> That is, there is no genetic cause, no inherent or inherited disorder that produces criminal activity. There is no root “cause” of criminality that can be found in brain scans or chromosomes, despite many studies based in these theories. Rather, criminal behavior is approached in the models described here as a *functional* problem. When the time comes to act, criminal choices are made out of a lack of information, life skills, or practice of effective problem-solving behaviors. Criminal behavior is one result of faulty judgement and poor decision making skills. The corresponding premise is, given the right learning environment and the opportunity to practice skills that can be taught to anyone, offenders can learn functional, effective, useful and appropriate skills to manage their lives and choices, and cease to act as criminals.

The models presented offer both the skills and the opportunity to practice those skills to correct the *functional deficit* in thinking and decision making skills. The results, researched and published for more than 20 years, demonstrate clearly that this model has reduced criminal behavior in certain high risk individuals, as measured by reduced recidivism and increased pro-social activity after release from short-term programs specifically designed to intervene with the target population. This approach is not presented as a panacea, nor is it posited as *“the answer”* to the problems addressed here. This document presents a specific design, for a specially targeted population, with intervention offered along a continuum of care from institutional, Total Learning Environments™ (TLE™), to aftercare post-release, with checks and balances carefully built in and measured. This focused intervention is predicated on specific theoretical assumptions:

- *People want to feel successful in their lives. Perceiving themselves as smart and effective learners helps them to feel successful.*
- *Learning should be fun, exciting, exhilarating and easy.*
- *The drive to learn is a biological imperative. As a species, humans must learn in order to survive. Human beings have been genetically encoded to learn. Those who cannot or do not learn have been “taught” by their early childhood environment or other circumstances that they cannot learn or do not learn well.*

- *Human beings naturally want to change and grow as part of evolution. People also want to be part of a successful community of like-minded people.*
- *Every child has the gift of learning. The teacher's job is to help them unwrap that gift.*
- *When the drive to learn has been stifled, people can regain their ability and excitement for learning at any time, as effective techniques and methods are employed to support them.*
- *What one learns is not as important as learning how to learn. In this age of accelerating change and the compression of time, what one knows today may be obsolete tomorrow. The skills and abilities to learn quickly and give up old behaviors/habits will be crucial to success in the new millennium.*
- *When people BELIEVE they can learn, they can learn ANYTHING. When they are taught specific skills and strategies, they can learn anything — faster.*
- *Learning can be very fast.*
- *One's perceptions are one's reality.*
- *Each learner is an individual with a unique learning style. It is the job of the teacher to teach to the learner's style, not the learner's job to learn from the teacher's style.*
- *Thinking is a wholistic, omni-dimensional process. Learning is a wholistic, multi-sensorial process. To think and learn only linearly is to put limits on one-self.*
- *Everyone makes mistakes. Embracing the concept that mistakes are normal and the basis for learning is a fundamental principle in life-long success.*
- *For behavioral change and growth to happen, all aspects of a person's being (whole being) need to be addressed (ie. Physical, Emotional, Psychological, Spiritual and Interpersonal).*
- *By teaching any subject, even nuclear physics, within the right context, the student can learn to understand it easily.<sup>12</sup>*

This philosophy is integrated into every aspect of the model first implemented in the TLE™ developed for correctional institutions, and in the curricula and materials developed for DOING LIFE! and S.M.A.R.T. CHOICES. The results demonstrate that even with a population as

recalcitrant as offenders, in a system as entrenched as corrections, these operating assumptions produce dramatic results when actualized through effective strategies. All programs are designed and delivered in an accelerated learning format. Therefore, learning occurs dramatically faster than in traditional educational formats. The model has been adapted for substance abuse treatment and is currently being translated for use in the educational system, for all grade levels.

The tools, curricula, materials and programs are based on easy-to-understand and easy-to-use skills. The approach keeps things simple and straightforward. Most importantly, the programs can be delivered by anyone who has a desire to learn the skills. One does not have to have a Master's Degree or Ph.D. to teach the skills presented here. Nor does an offender or student have to have an advanced degree to study and learn the skills. This is important in the criminal justice system, where the majority of staff who work in prisons are corrections officers, most of whom do not have advanced educations, yet hold the keys, literally, to program effectiveness. If inmates do not get to classes, they cannot learn the skills they need to succeed. Not only do people who have learned the skills presented here receive good "data" and information, they gain exceptional skills that translate into practical experience in their daily lives. Graduates who successfully complete the programs regularly apply skills learned after release or in their jobs, in their home and work environments. That is the whole point of this work. One can teach and preach good ideas forever, but unless people can actually use what they learn long into the future, valuable time is wasted.

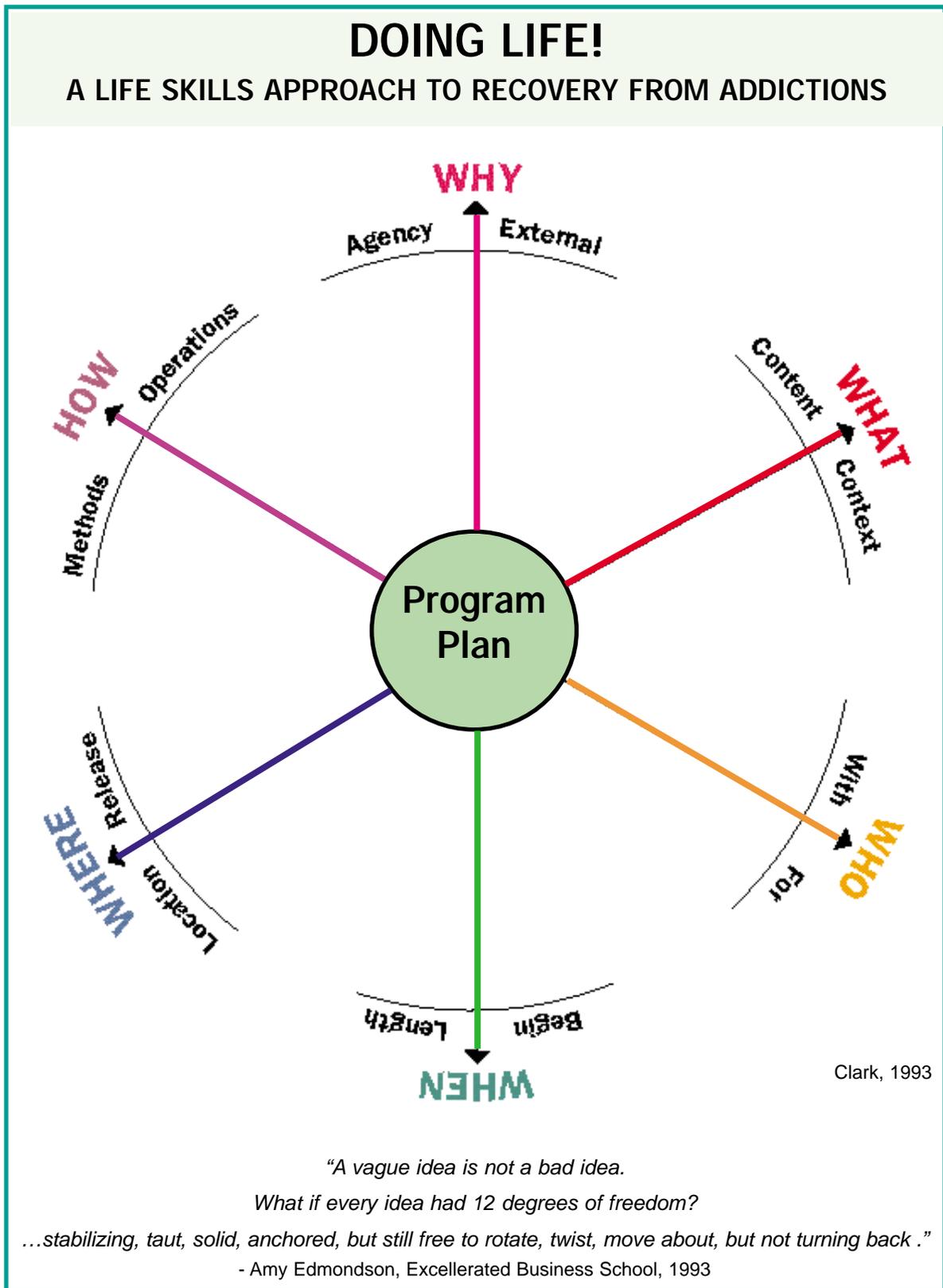
### **12° Of Freedom**

Challenged by the question, "*What if every idea had 12 degrees of freedom? ...stabilizing, taut, solid, anchored, but still free to rotate, twist, move about, but not turning back,*"<sup>13</sup> some possible approaches to correctional treatment are offered from *experienced-based knowledge* of the criminal justice system. In her book, A Fuller Explanation, Edmondson, provides simple, direct, easily accessible exercises to anchor these concepts in practical experience.<sup>14</sup> In this book and in her lectures to Global Educator's groups since 1983, she suggests that exploring six fundamental questions from the perspective of content/context, macro/micro issues, and inside/outness results in 12° of Freedom

in every endeavor, ensuring stability, effectiveness and efficiency in operations. The illustration on the facing page outlines the twelve questions answered as a part of the planning for DOING LIFE! and the earlier prototype correctional treatment program, Network.

Edmondson encourages her audience, saying, “*A vague idea is not a bad idea.*” Using the sequence and structure of the questions she proposes, even a vague, unformed idea can be developed into a fully functional plan for action. Answering the questions in the frame posed here, relative to who, what, when, where, why and how, before beginning any project, dramatically increases the chances of success of the endeavor. Examples of the types of questions Edmondson proposes a planner explore include:

1. **Why** - Why does the agency/organization want to do this? What is the purpose and/or need in beginning this project? Is there anybody out there who has a need for this? Why do they want it? What is the agency’s/organization’s self-motivation? (Internal) What is the motivation or purpose of the target audience, consumer, customer, legislature, funding source? (External)
2. **What** - Is it a product or a service? What is the product/service about? What is in it? (Content) What will the product/service consist of? What form does it take? (Context)
3. **Who** - With whom will you be developing/implementing this? Who is on your team? With whom will you be working? Who is your target audience? Who is the product or service for? Who is the customer/consumer? Who will do the marketing? Who will deliver the service?
4. **When** - By when does this need to be completed? What is the deadline? (micro) How often must this be done? How long will it last? Cycles? What is the time commitment, frequency? (macro)
5. **Where** - Where will the program/service/product distribution center be located? Will the program be connected to a larger organization or free-standing? Where is follow-up or aftercare located? Aftercare proximity to program?
6. **How** - How will the program/product/service be marketed? What methodology will be used in the delivery of the product/service? What is the overall theory from which it will operate? How will it be implemented? How will it work? How will the logistics operate? How will day to day operations work?



These questions are very similar to those asked in the early stages of development of the Network Program, the first of a highly successful series of Total Learning Environments™ in prisons. It was reassuring to find reinforcement for this intuitive approach to an initially *vague idea* about what could be done to impact on the lives of those who live and work in the criminal justice system. Having this model as a structure for thinking about the issues that need to be addressed in the development of any product or service is a useful tool.

The Mind Map on the previous page was designed as a guide for planners in corrections and education. The *Planning Guide for Boot Camps*<sup>15</sup> guides administrators through the planning process and is being used by corrections agencies throughout the world to assist them in the development and implementation of a variety of treatment programs for offenders. It is the centerpiece of training workshops that prepare program leaders to administer these programs.

Edmondson's particular gift is her ability to translate the very complex ideas she learned from Fuller into simple language, easily understood by someone outside of the disciplines of mathematics and science. As one of his closest associates towards the end of his life, Edmondson has continued Fuller's work, since his death in 1983, translating his ideas into exciting learning experiences for students who seek to grasp and apply the principles in other fields. These concepts have also been applied to the development of environments for change in prisons. The following is a brief summary of the responses to the internal/external dimensions influencing the design of the TLE™:

1. **Why** - Prison overcrowding results in the need for more prison space. The United States added 165 prison beds every day throughout the 1990's. Non-violent offenders are receiving longer sentences for crimes related to drugs and alcohol. The public wants to feel safe, therefore: increase bed space for violent offenders, reduce costs by releasing non-violent offenders early. Scarce resources for incarceration can be dedicated to incarcerating violent offenders for the majority of their sentences.
2. **What** - Shock Incarceration provides intensive drug treatment and education to non-violent offenders offering them an opportunity to earn early release for successful completion. The program includes treatment, academic education, physical exercise, life skills, work. (Content) The program is based in both para-military and ther-

apeutic community models, to maximize learning. (Context)

3. **Who** - Staff of correctional service agencies are specially trained to deliver the program to specially selected inmates who meet specific criteria. Staff and inmates volunteer to participate.
4. **When** - The Shock Incarceration program consists of a six-month institutional phase and a minimum of a six-month aftercare phase. The Willard DTC is the first 90 days of a 15 month program. The daily schedule in all institutional programs begins at 5:30 AM with physical exercise and concludes after classes, with lights out at 9:30 PM. Aftercare includes two to three meetings per week with parole officers and service providers for the first three months after release, a minimum of one meeting per week in the second three months of release, and as designated by the parole officer for the remainder of the term of parole.
5. **Where** - The program operates in facilities designated by the correctional agency. Aftercare programs are located in cities, towns and villages throughout the state, in the offenders' home communities.
6. **How** - The program includes drug and alcohol treatment, life skills, decision making classes, daily community meetings, academic education to the high school equivalency level, physical labor to provide services to non-profit agencies to communities adjacent to the correctional facility. All programming is mandatory once the offender volunteers. All movement is in orderly military formation.

The program is designed to teach inmates how to live in freedom, responsibly. Fuller expressed the concept of 12° of Freedom in the language of geometry:

*"... there are six positive and six negative degrees of freedom in Universe in respect to which all structural systems in Universe must abide. Every healthy and active child quickly discovers five of them, as more fully described in Synergetics (1975): (1) axial rotation, (2) orbital rotation, (3) expansion-contraction, (4) torque (twist), and (5) "inside-outing." The sixth, precession, is also experienced by the child, ..."*<sup>16</sup>

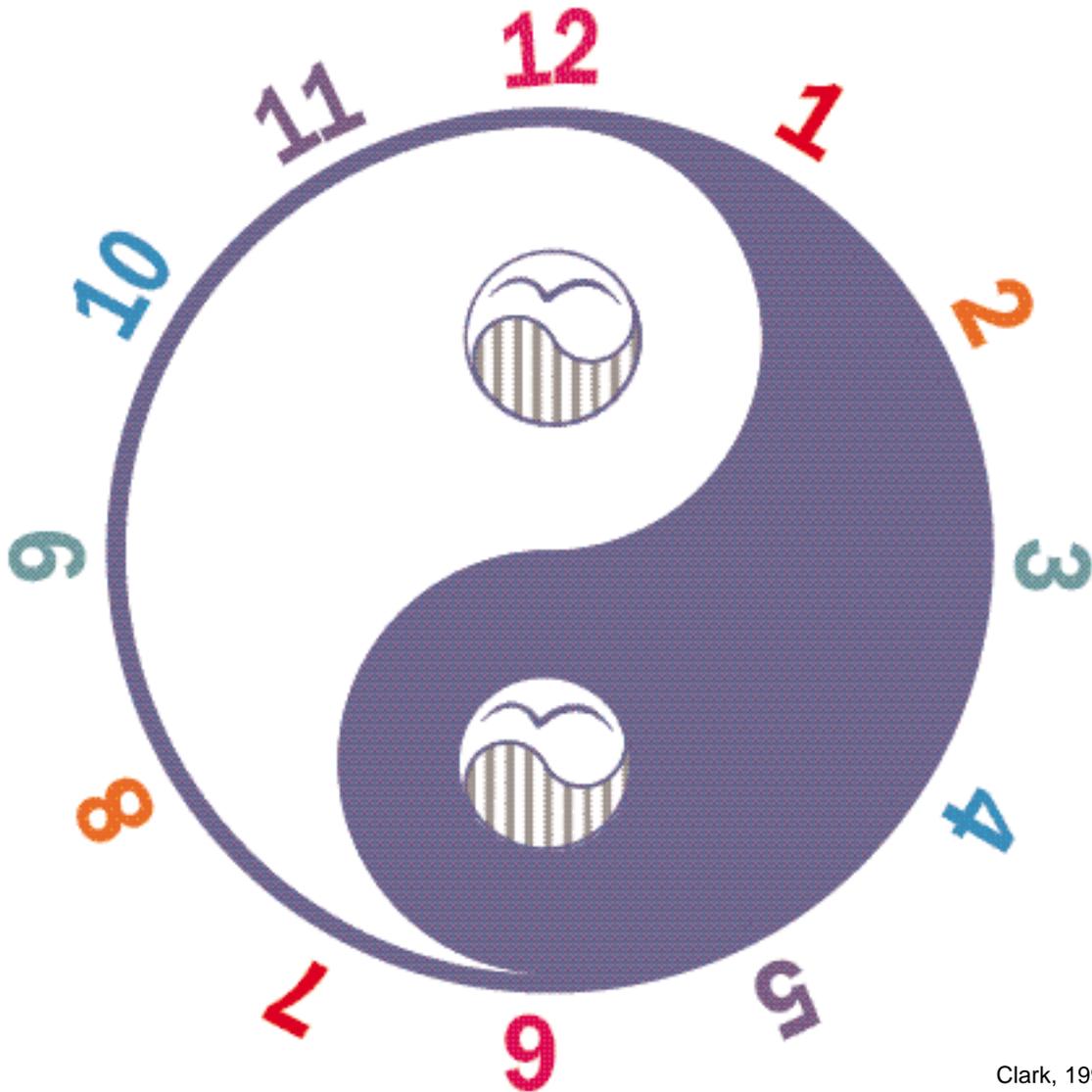
These “*six positive and six negative degrees of freedom in Universe*” are the core of Fuller’s inventions and discoveries. By Universe, Fuller means, “*the aggregate of all humanity’s consciously apprehended and communicated nonsimultaneous and only partially overlapping experiences.*”<sup>18</sup> Universe is all there is. “*Fuller deliberately omits the article, for ‘the universe’ implies the possible existence of more than one—just as we do not say ‘the God’ but rather simply ‘God.’ Fuller capitalizes ‘Universe’ for the same reason: Universe is everything; it’s all there is.*”<sup>19</sup>

The study of Universal Principles offers the opportunity to discover functional strategies for success in any arena. They are particularly relevant to the 12 Steps to Recovery, as the 12 Steps are also Universal Principles for living a successful life of stability, freedom, growth and forward movement, and parallel the 12° of Freedom named above. The end result of ensuring all 12° of Freedom in an event or system, is unshakable integrity. That is, each Degree of Freedom creates greater stability: 12° of Freedom results in total stability.

Fuller insisted on a careful definition of the terms he used, saying, “*words are tools*”<sup>20</sup> and should be used carefully, thoughtfully and with precision, to ensure maximum clarity. Indeed, he used very precise language, coining words that would express his precise meaning and combining words to enlarge one’s understanding of the Universal Principles he studied in depth. Because of his precise, highly complex language, many find him incomprehensible. Fuller encouraged the comprehensive study of geometry, poetry, history, design and science, warning against specialization, which “*leads to extinction*” because of the narrowing of focus and elimination of possibility.

Dictionary definitions of the terms Fuller uses when he discusses the “*six positive and six negative degrees of freedom in Universe in respect to which all structural systems in Universe must abide*”, and the interpretations of those definitions as they apply to the 12 Steps to Recovery, are used in the DOING LIFE! curriculum and in S.M.A.R.T. CHOICES. The applications discussed in this work as expressed in these curricula and the Total Learning Environments™ are solely those of this writer. Neither Buckminster Fuller, Amy Edmondson, nor any of Fuller’s other colleagues, discussed the 12 Steps in relation to 12° of Freedom. None of them should be held responsible for the interpretations or applications of the principles as presented here.

## SIX POSITIVE AND SIX NEGATIVE DEGREES OF FREEDOM IN UNIVERSE



Clark, 1995

*“...six positive and six negative degrees of fundamental transformation freedoms, ... provide 12 alternate ways in which nature can behave economically upon each and every energy-event occurrence.”<sup>21</sup>*

## **1. Axial Rotation**

Axial rotation is “turning on an axis; the movement or path of the earth or a heavenly body turning on its axis.” Axis is “the line about which a rotating body, such as the earth, turns; a central line bisecting a body, form, or the like, and in relation to which symmetry is determined; a central or principal structure about which something turns or is arranged: the skeletal axis. The longitudinal support on which organs or parts are arranged; the central line of any body.”<sup>22</sup> Fuller used as an example of the child’s discovery of this principle, the spinning of a top, rotating on its axis, and moving about the room in a forward motion. Children too, spin like tops, arms spread wide, faces lifted to the sun, laughing with the joy of being alive.

The earth spins on its axis, as do all planets and “*celestial bodies*”, something Johannes Kepler discovered through the use of his first telescope and has been made ever more clear as refinements in technology have brought Universe closer to man’s view. As humans began to look outward from this *small, blue planet*<sup>23</sup> they discovered the regular rotation of other bodies in the ‘heavens’ and began to apply what they learned to the Earth.

Time as measured on Earth is based in the Earth’s regular, predictable rotation on its axis, i.e. day follows night. There are 24 hours in an earth day, the sun’s movement appears always east to west as humans look out (not up,—“*up*” is *Dark Ages thinking*) from the Earth as it rotates on its axis. This movement is constant, consistent, orderly and predictable. The sun is sighted in the morning and clipses in the evening as the Earth rotates on its axis in this regular east-west direction. To say the sun “rises” and “sets” is another example of imprecise *Dark Ages thinking*, left over from a belief in a “flat earth,” off which some long-ago explorers feared they would fall if they sailed beyond the horizon. Fuller used to have students stand at the end of the day, sideways, at a right angle to the Western horizon, holding one arm out toward the sun, sighting along the arm as it clipped, to feel the rotation of the Earth.

Humans and other animals are bilateral, the spine is the *central line* of the body. The second cervical vertebra is the axis. Humans move forward from their center, or axis, in the world. Learning to find one’s center and to move effectively from that center is the essence of the 12 Steps to Recovery.<sup>24</sup> The 12 Steps are a means of finding one’s true center, a way of

## STEP 1: ADMIT THE TRUTH



*“What a wonderful thing, the laws of physics. Wherever you go in the universe, they apply. If you were to travel to the far reaches of our galaxy and find a planet with intelligent life, those beings may never have heard of communism or capitalism or lawyers or politicians, but they would know the laws of physics. If God wrote any laws to govern us, He certainly wrote these laws. How could anyone be a great explorer ... and not know the laws ruling the planet?”*

- Robert Ballard, Oceanographer, May 1992<sup>25</sup>

understanding that there is a predictable orderly flow to all life, a **Good Orderly Direction** (G.O.D.) in Universe that supports life to flourish. This direction is neither invented nor imposed by man, but exists as a fundamental principle of nature, of the laws of physics.

The 12 Steps are strategies for success that begin from within—out; teaching one to move forward from the center of one's *experienced-based knowledge*, rather than from what one might have been *conditioned to think* by media, popular culture, television, Hollywood, family patterns and habits of thinking.<sup>26</sup> The Steps accept the inevitability of mistakes, cautioning alcoholics and other addicts that they have made some very serious mistakes as a result of their addiction and offering a step-by-step methodology for correcting them.

Addiction knocks people off center, interfering with the marvelous design for this unique, thinking, responding species. While each of the 12 Steps is inherently aligned with all of the principles discussed here, Step 1 and Step 7 are most closely related to the principle of Axial Rotation. Step 1 allows addicts to rediscover their center, the truth of who they are designed to be by *cosmic integrity and absolute wisdom*,<sup>27</sup> by admitting the truth about the damage caused by being off-center, of cutting off one's awareness of one's feelings, beliefs and needs. This is the negative polarity, the internal aspect of Axial Rotation. Step 7 teaches one to act from humility, from the core of who one is, centered in *the truth that embraces and permeates scenario Universe*.<sup>28</sup> This is the positive polarity, the external aspect of Axial Rotation.

Step 1 is a difficult Step to take, especially for one who has been mired in D.E.N.I.A.L. No one wants to admit his or her life is out of control, especially when things are as bad as alcoholics and addicts can make them. This is however, the most important Step of all. The only way addicts can truly begin to recover is to tell the truth about their addiction, especially the most disgusting and degrading things they have done, that deny their very humanity.

By the time one gets to Step 7, he or she will have delved deep into their mistakes and failures in Step 1 through 6. Here, one is centered in reality. Ego is no longer running the show. By this Step, addicts have rediscovered the essence of who they are and are being prepared to act in the world from a true sense of self, accepting that by admitting they are out of control, they only need "be." Fuller said we are called human beings, not human "doings."

## STEP 7: HUMBLY ASKED



Of humility, Fuller said:

*“Since nature was clearly intent on making humans successful in support of the integrity of eternally regenerative Universe, it seemed clear that if I undertook ever more humanly favorable physical-environment-producing artifact developments, that in fact did improve the chances of all humanity’s successful development, it was quite possible that nature would support my efforts, ... —ergo, I must so commit myself and must depend upon nature providing the physical means of realization of my invented environment-enhancing artifacts. ... Nature does not require that any of its intercompementing members ‘earn a living’.”<sup>29</sup>*

## **2. Orbital Rotation**

Orbital rotation is “*the curved path, usually elliptical, described by a planet, satellite, etc., about a celestial body, as the sun; the path traced by an electron revolving around the nucleus of an atom;*” and has to do with “*the usual course of one’s life or range of one’s activities.*” To orbit is “*to move or travel around in an orbital or elliptical path.*”<sup>30</sup> In human terms, to orbit is to be in relationship with others or another and with the environment, “*all that is that isn’t me.*”<sup>31</sup>

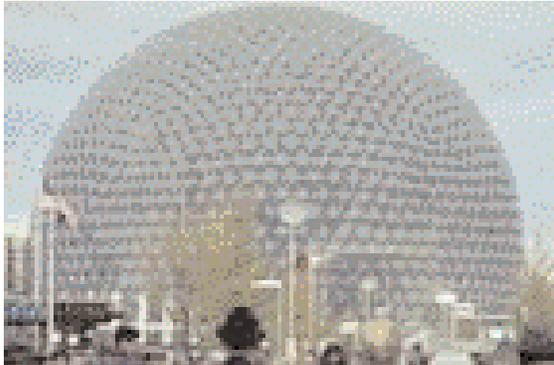
As one goes about *the usual course of one’s life or ... activities*, it is important to remember that there are no straight lines in Universe or nature, only waves. Straight lines are a concept imposed by man on the inherent order of Universe. The concept of straight lines is another example of *Dark Ages thinking*, left over from a belief in the world as flat. No one moves from point A to point B in a perfectly straight line, without mistakes.

Fuller believed that humans are designed to succeed, stepping first left then right, correcting their forward movement with each step. Humans were not born with a right foot and a wrong foot, rather, humans were given a right foot and a left foot, moving forward from side to side, correcting as they go.<sup>32</sup> Rather than punish themselves for their mistakes, Fuller believed mistakes were the principal way humans learned. He said mistakes are inevitable, and in fact the only way humans learn. When asked how he had become so successful, he answered that it was because he had made more mistakes than anyone else.

Fuller abused alcohol in his youth and repeatedly disappointed everyone who most loved him. After witnessing his first daughter’s death at age 4, and having his very last moment with her be his confession that he had let her down again, he went into a deep depression that approached despair. As he was about to drown himself, he heard the voice of God tell him, “*You do not belong to you, you belong to the Universe.*” He resolved then to devote the rest of his life to working exclusively on behalf of all humanity and later said that the greater number of people he attempted to serve, the more successful he became. He decided that if he worked to serve all humanity, he would be maximally successful.<sup>33</sup> The illustration here symbolizes his journey from self-absorbed selfishness to selfless service on behalf of all humanity.

The 12 Steps address the issue of healthy relationships. The Steps focus on repairing

## **STEP 2: "WE CAME TO BELIEVE ... A POWER GREATER THAN OURSELVES ..."**



### **TRUST THE DANCE**

- Marshall Thurber

*Money and You (Synergetics applied to Business)*



*"Human beings were given a left foot and a right foot  
to make a mistake first to the left, then to the right, and repeat  
... it is the way the universe works."*

- Fuller, "Mistake Mystique"

the damage done by treating oneself and others disrespectfully. They are principally intended to correct mistakes caused by addiction to mind-altering and mind-numbing substances. The TLE™ provide opportunities to learn how to live in society responsibly, from an understanding of these principles. That is, as the definition used here for responsibility says, “to get one’s needs met without interfering with others getting their needs met.”<sup>34</sup> The TLE™ and DOING LIFE! show those working with the programs how to avoid the drama that results from relationships that are based in need rather than mutual respect, and how to build emotionally healthy relationships that meet one’s own needs without taking anything away from others.

Fuller suggested that humans “orbit in love.”<sup>35</sup> He cautioned that to “fall in love” usually results in crashing into things, (assumptions, walls, opposing beliefs, attitudes) or gets one burned (as the earth falling into the sun). He suggested that humans learn how to be in relationship to others without trying to change, control, possess or “own” them, to respect and maintain an appropriate amount of space between each other, to allow life to flourish. Rather than grasp at another, orbit with others in a “dance” of respect and appreciation for the gifts each brings to the relationship. Sufi, Hinduism and other Eastern Philosophies refer to the Universal Principles as “lila,” in Sanskrit, the Divine play or dance of Universe.<sup>36</sup>

Steps 2 and 8 are most closely related to the principle of Orbital Rotation. Step 2 reminds human beings that there is “a power greater than ourselves”<sup>37</sup> operating in Universe. As Fuller used to say, “We didn’t design Universe and we don’t run it.” There is an order to the seasons, each following in a predictable sequence, summer, fall, winter, spring, each serving its own special purpose in supporting life on this planet, resulting from the orderly rotation of the planet around the sun in 365.25 days per year.

Step 8 asks those taking the steps to “make a list of the people we have harmed,” requiring that they think about their relationships to others and be “willing to make amends to them all” for injuries caused by addiction knocking one off center.<sup>38</sup> Together, these two steps support reflection on an individual’s relationship to all life, “a power greater than” humans alone and to “the people” with whom one is in relationship. All humans, regardless of race, creed, color or national origin are perfectly designed. The core of DNA is the same in all life, with the basic codes manifesting uniquely in individuals and species.<sup>39</sup>

**STEP 8: "WE MADE A LIST  
OF THE PEOPLE WE ..."**

**H**URT

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**I**NTIMIDATED

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**T**HREATENED

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From *Step 8: Became Willing*, in **DOING LIFE!**

### **3. Expansion-Contraction**

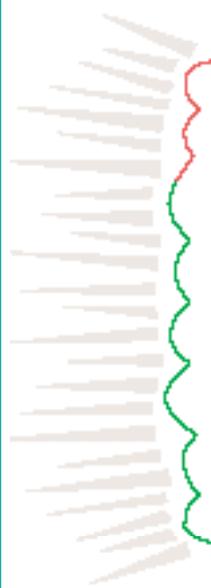
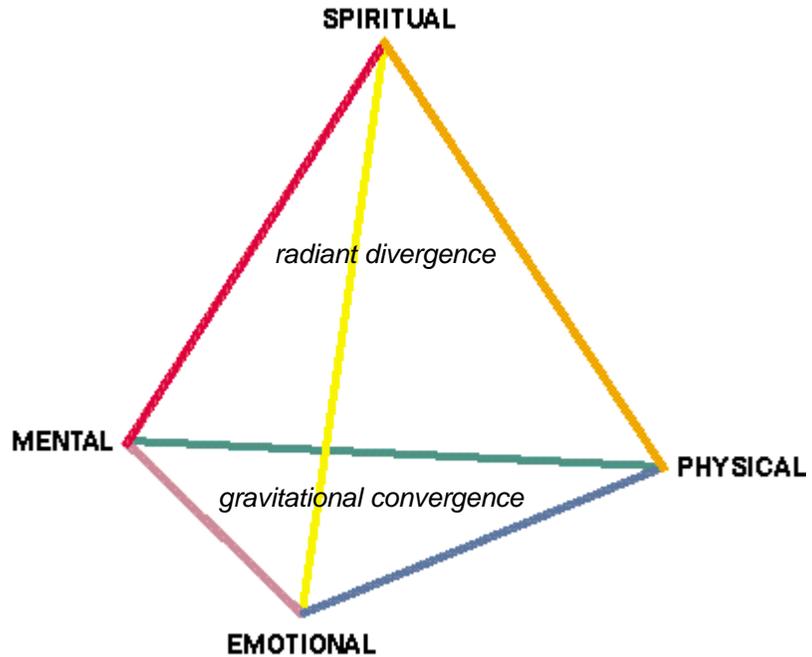
Expansion relates to Sun's "radiant divergence" bringing light and growth; contraction to the "gravitational convergence"<sup>40</sup> of Earth. Systems expand and contract. There is both growth and decay in a life cycle, each contributing to the next phase of the cycle. Spring heralds new growth; summer brings the fullness of that growth; fall, harvest and decay; winter allows dormancy, rest. Whether in the Northern or Southern hemisphere of the planet, while the seasons are opposite each other, nonetheless, they flow in the same cycle, expansion and contraction balancing each other, as the planet tilts and rotates on its axis, orbiting the sun.

To expand is "to increase in extent, size, volume, scope, etc.; to spread or stretch out; unfold; to express in fuller form or greater detail; to increase or grow in extent, bulk, scope, etc." Contraction as it is used here is "to, shorten, lessen, narrow, shrivel, shrink."<sup>41</sup> These are two stages of the continuum of growth, occurring in all living systems, each dependent on the other, each contributing to the other.

Human beings do well to remain aware of these cycles of nature as they learn the skills necessary to embrace positive growth and the inevitable changes at each stage of their own lives. Heat expands, cold contracts. The seasons observed in nature allow for growth and rest. Expansion (syntropy) and contraction (entropy) are functions of all living systems. Human beings are designed to be open systems, expanding toward new growth. In order to grow fully as intended in the design, humans also need regular periods of rest. A cup of coffee is closed system, unable to exchange energy, losing heat and warmth when left to sit. A rock is an example of a closed system, while moving as does all life, rocks move and change so slowly as to be imperceptible by humans with their relatively short life span.<sup>42</sup>

Steps 3 and 9 speak to the principle of Expansion and Contraction. In Step 3, that "power greater than ourselves" is named "God, as we understood Him." This is not the anthropomorphic God of misinformation and *Dark Ages thinking* that limits God to **Him**, a Father who rewards "good" and punishes "bad." The 12 Steps encourage one to rethink her or his relationship to God, to expand understanding of what Fuller referred to as, "the cosmic integrity and absolute wisdom we identify inadequately by the name "God" (that) speaks to each of us directly -- and speaks only through our individual awareness of truth and our most spontaneous and

# THE WHOLE COMPLEX OF OMNI-INTERACCOMMODATIVE GENERALIZED PRINCIPLES



**G**ood  
**O**rdery  
**D**irection



Step 3: *Decide to Surrender, DOING LIFE!*

*“Acknowledging the mathematically elegant intellectual integrity of eternally regenerative Universe is one way of identifying God. ... God may also be identified as the synergy of the interbehavioral relationships of all the principles unpredicted by the behaviors or characteristics of any of the principles considered only separately.”<sup>43</sup>*

*powerful emotions of love and compassion.”<sup>44</sup>*

In Step 9, one expands outward to make “*direct amends to the people we have harmed, except when to do so would injure them or others.*”<sup>45</sup> No longer is the addict’s whine, “*I, ME, MINE! First, last, always! I want what I want when I want it!*”, the driving force behind every thought and deed. The Steps taken between 3 and 9 lead them deeper into an understanding of responsible thinking and action to the point where they reach out to others to ask for their forgiveness. There are no guarantees here. Addicts must understand that they have hurt people deeply. Just because they are ready to move on doesn’t mean others will be. They learn in Step 9 to offer their amends, directly, and accept the response from others, whatever it may be. The 12 Steps expand the concept of “*God, as we understood Him,*” to include:

*“The whole complex of omni-interaccommodative generalized principles thus far found by science to be governing all the behaviors of universe altogether manifest an infallible wisdom’s interconsiderate, unified design, ergo an a priori, intellectual integrity conceptioning, as well as a human intellect discoverability.”<sup>46</sup>*

In other words, the **Good Orderly Direction** of the way Universe operates. In order to experience this “*cosmic integrity and absolute wisdom,*” one must go within, as does nature in the stage of contraction, in stillness, to focus and re-examine assumptions, to expand toward an all-encompassing experience of G.O.D., rather than limit God to that created in man’s “*image and likeness*” instead of the other way around.

The accompanying excerpt from one of Fuller’s explorations of the Lord’s Prayer, “**EVER RETHINKING THE LORD’S PRAYER**” in Critical Path, is one of many expressions of the deep, constant faith at the foundation of his work.<sup>47</sup> Fuller believed it to be impossible to be a student of nature and deny the existence of God. In addition to his observations of the laws of nature, Fuller frequently acknowledges Albert Einstein, as one source of inspiration for his belief in the absolute proof of the existence of God.

*“In 1930 Einstein, ‘Mr. Science’ himself, published his ‘Cosmic Religious Sense,—the Nonanthromorphic Concept of God.’ Einstein said that the great scientists such as Kepler and Galileo, ... were, because of their absolute faith in the orderliness of Universe, far more committed to the nonanthromorphic cosmic God than were the individuals heading the formal religious organizations.”<sup>48</sup>*

## EVER RETHINKING THE LORD'S PRAYER

July 12, 1979

“ ...

*Our God—  
Since omni-experience is your identity  
You have given us  
overwhelming manifest:—  
of Your complete knowledge  
of Your complete comprehension  
of Your complete concern  
of Your complete coordination  
of Your complete responsibility  
of Your complete capability to cope  
in absolute wisdom and effectiveness  
with all problems and events  
and of your eternally unfailing reliability  
so to do*

*Yours, Dear God,  
is the only and complete glory.*

...

*You, Dear God  
are the totally loving intellect  
ever designing  
and ever daring to test  
and thereby irrefutably proving  
to the uncompromising satisfaction  
of your own comprehensive and incisive  
knowledge of absolute truth  
that Your generalized principles  
adequately accomodate any and all  
special case developments,  
involvements and side effects;  
wherefore Your absolutely courageous  
omnirigorous and ruthless self-testing  
alone can and does absolutely guarantee  
total conservation  
of the integrity  
of eternally regenerative Universe.*

... ”

#### **4. Torque (Twist)**

Torque is *“that which produces the movement or path of the earth or a heavenly body turning on its axis; the movement of a force or system of forces tending to cause rotation; the measured ability of a rotating element, as of a gear or shaft, to overcome turning resistance.”*<sup>49</sup> It is the energy required to twist or move something on its axis.

Torque is pressure applied precisely to overcome resistance to movement, the action of a wrench to turn a bolt, or in the child’s example that Fuller refers to, a wound up rubber band on the propeller of a toy airplane or a spring-wound toy. When the rubber band is wound tightly and the child lets go of the plane, the unwinding of the rubber band turns the axis, moving the plane forward. When the screw is turned on a wind-up toy, as the screw unwinds, the toy moves forward. This is the same principle that moves ships, airplanes and other mechanical devices. When pressure is properly applied, the object moves on its axis, twists without breaking or snapping. Using leverage gives more torque with less effort.

The 12 Steps apply gradually increasing pressure for change, to help addicts move out of the places where they are stuck and into forward motion. Both the 12 Steps and the TLE™ provide the Torque to overcome resistance to change on the part of the addict. The pressure to change is gradually increased as they become stronger and develop more skills. The 12 Steps and the TLE™ keep the steadily applied pressure on participants to help them transform to a higher level of functioning. Leverage is the group process, the TLE™ Community, or the “Fellowship” of AA and NA that supports each participant to be the best they can be. That the recidivism rates in Shock Incarceration are the lowest in the country, is further evidence of the effectiveness of this properly applied principle.<sup>50</sup>

Steps 4 and 10 are specifically related to Torque. It was writing the exercises for these two Steps in DOING LIFE! that produced a sudden, profound insight and complete understanding of how Fuller’s Universal Principles directly applied to the 12 Steps as they were being taught in the TLE™ and DOING LIFE!. No longer an intuitive, vague, unformed idea, the clarity was startling. From this point, it became easy to explain the 12 Steps in relation to these principles. With each examination, the Universal Principles underlying the 12 Steps became

## **STEP 4: "... MADE A SEARCHING AND FEARLESS MORAL INVENTORY ..."**

**H**ungry  
**A**ngry  
**L**onely  
**T**ired



*"In 1907, at the age of twelve, challenged by Robert Burns's 'Oh wad some power the giftie gie us to see oursels as others see us,' I sought to 'see' myself as others might and to integrate that other self with my self-seen self and thereafter to deal as objectively as possible with the comprehensively integrated self."<sup>51</sup>*

more and more clear. The writing and teaching supported deeper understanding through *experienced-based knowledge*.

Steps 4 and 10 are concerned with taking “*personal inventory*.” In Step 4, addicts make “*a searching and fearless moral inventory*” of themselves and in Step 10, they continue to take “*personal inventory and when wrong, promptly admit it*.”<sup>52</sup> They get a new twist on themselves, having gone within, (*negative degree of freedom*) finding their center, examining their lives, mistakes and all, thinking about their relationships to others and the God of their understanding, and being willing to take responsibility to move forward. (*positive degree of freedom*)

Fuller’s *Chronofile* is one example of a “*a searching and fearless moral inventory*.” He kept up the discipline for 76 years, from age 12 until his death in 1983. Thomas A. Edison and Alexander Graham Bell were two others who kept meticulous records of their inventions. Edison was famous for recording every failure and success, thus contributing to the mystique about the 10,000 tries it took him to invent the light bulb. The legend says his response to how he handled repeated failures was, “*Oh I haven’t failed, I know 9,999 ways it won’t work*.”

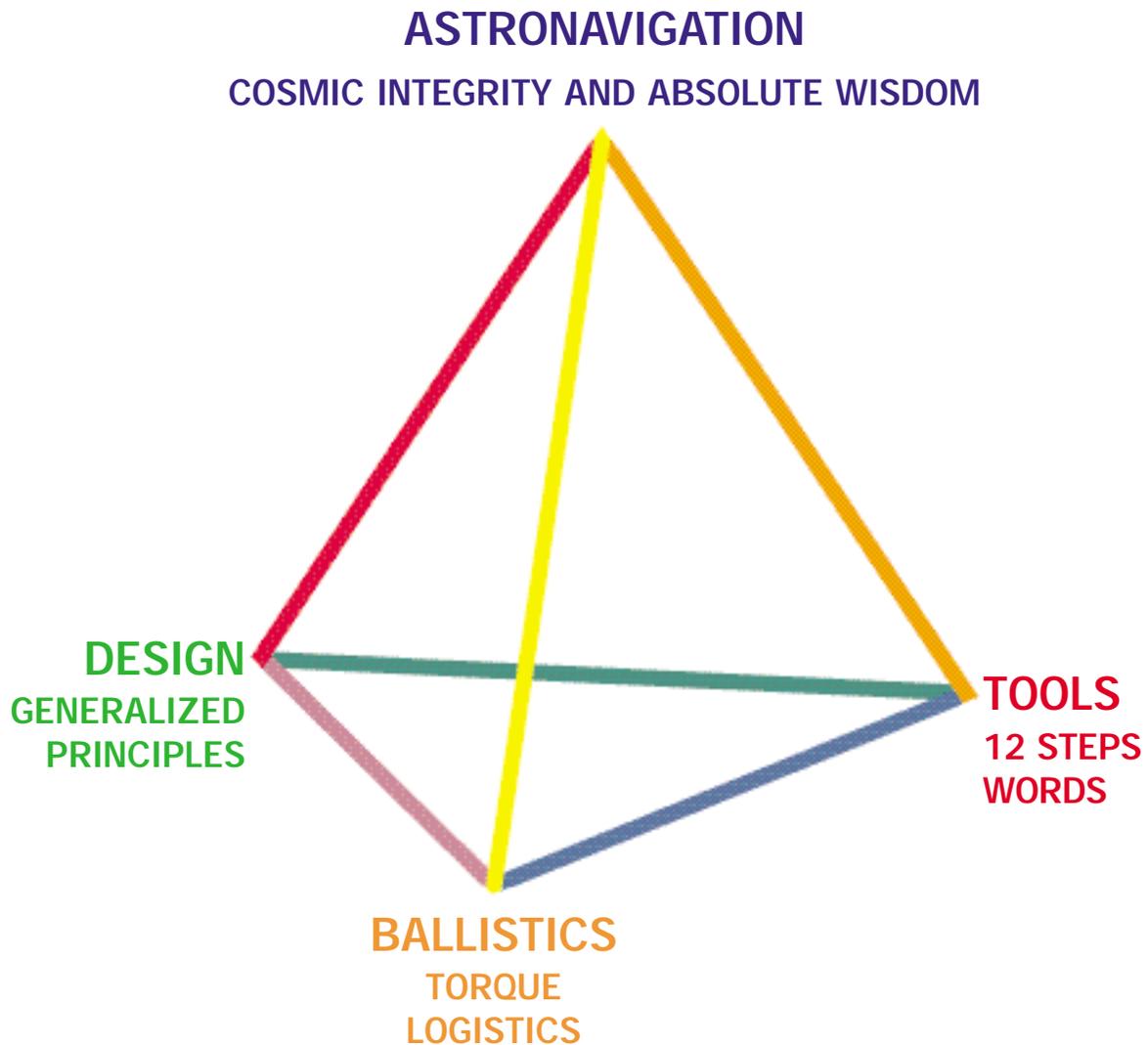
The pressure to face oneself fully and completely is often overwhelming. It takes the support of others and all the other Steps to have the courage to take these two Steps unflinchingly. An example used in DOING LIFE! discusses weight training. In order to build muscle mass, weight is progressively added as strength is built up. The more weight, the more resistance, the more resistance, the greater strength as a result of moving greater mass.<sup>53</sup>

On the Tetrahedron, Torque relates to Ballistics, the need to evaluate and remain on target toward the goal. Of Torque in nature, Fuller says:

*“I assumed that nature would ‘evaluate’ my work as I went along. If I was doing what nature wanted done, and if I was doing it in promising ways, permitted by nature’s principles, I would find my work being economically sustained—and vice versa, in which latter negative case I must quickly cease doing what I had been doing and seek logically alternate courses until I found the new course that nature signified her approval of by providing for its physical support.”*<sup>54</sup>

All of the 12 Steps, as Universal Principles, are a unified system, a synergetic whole, each building on the ones before, increasing stability and strength as they progress.

## **STEP 10: "... AND WHEN WRONG PROMPTLY ADMITTED IT"**



*"Disorder is born from order; cowardice from courage; weakness from strength. The line between disorder and order lies in logistics (shu); between cowardice and courage, in strategic advantage (shiu); and between weakness and strength, in strategic positioning (hsing)."<sup>55</sup>*

## **5. “Inside-Out”**

Fuller refers to this principle as Inside-Out or Inside-Outing. He says this is a more accurate way of thinking about movement in Universe than the concepts “up” and “down.” According to him, up and down are further examples of *Dark Ages thinking* that limit one’s experience of truth and narrow one’s ability to think effectively. Up and down are concepts left over from the era of a belief in a flat Earth. Some explorers in the ages of Columbus and Magellan were fearful of sailing beyond the horizon and falling off into oblivion, or worse, into the jaws of huge, savage monsters.

Inside is defined as *“an inner side or surface; the concave aspect of a curve; the part within; inward nature, mind, thoughts or feeling.”* Out is *“in a direction away from a particular point or place.”* Outside is *“the convex aspect of a curve.”* Though perhaps not technically the way Fuller meant it, yet apt nonetheless, outing is *“a trip or stay in the open.”*<sup>56</sup> Inside-out are two dimensions of one experience, each complementing the other. Fuller said:

*“In 1922 physicists discovered a fundamental complementarity of disparate individual phenomena to be operative in physical universe. This was fundamentally amplified with the subsequent discovery of the always-and-only-different, always-coexisting proton and neutron which, with their always coexistent electrons, positrons, neutrinos, and antineutrinos, are eternally intertransformable.*

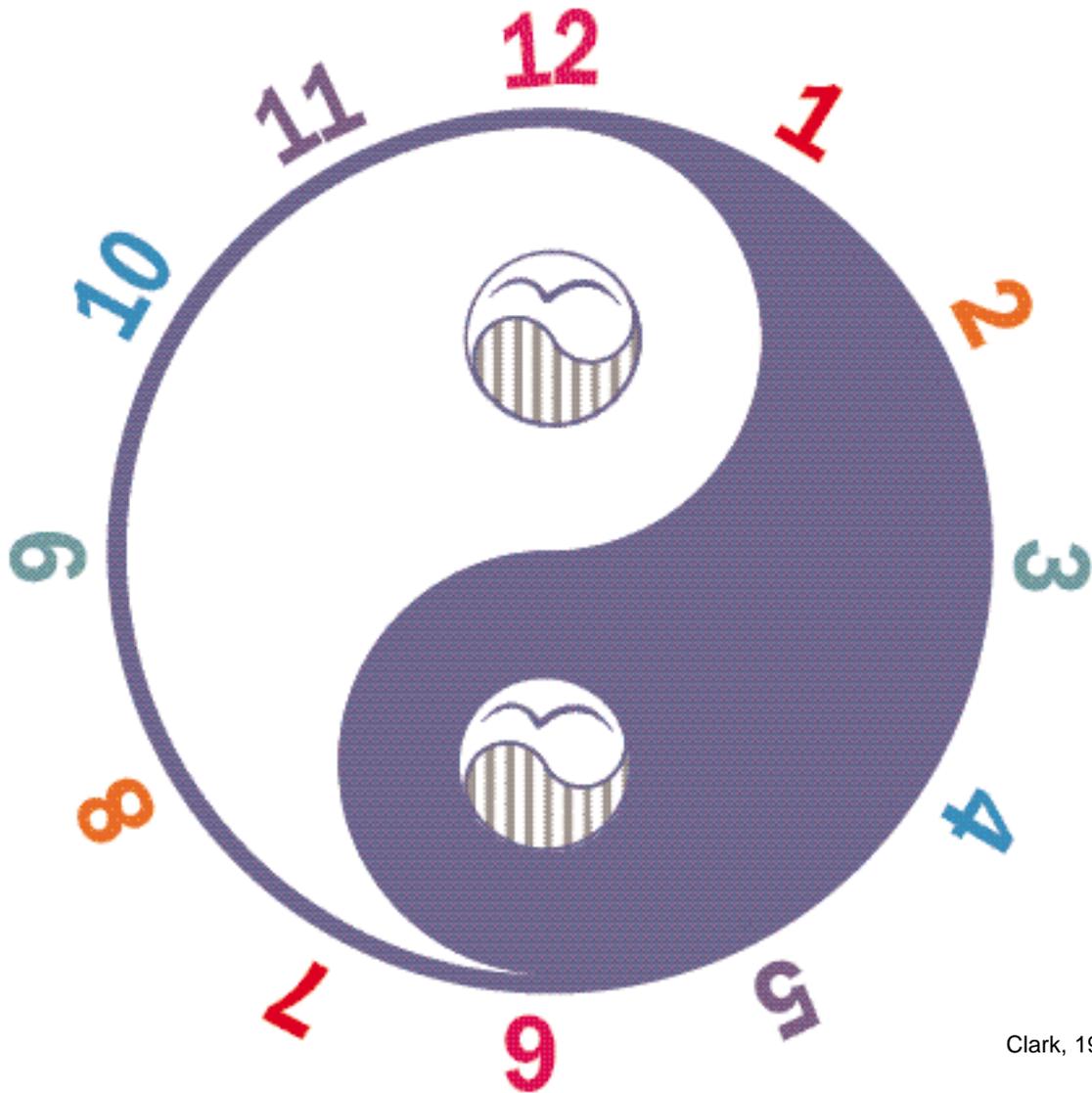
*No longer was valid the building block of the Universe. It was discovered that unity was plural and at minimum sixfold. ... Science’s discovery of fundamental complementarity has occasioned ... realization that the word negative used as the opposite of the word positive is at best carelessly and misinformedly employed.”*<sup>57</sup>

The Yin/Yang symbol on the next page depicts Inside/Outing as presented in DOING LIFE! The first six steps take one deeper and deeper Inside, (concave) learning the truth about who one is. The second six build on the first, teaching one to move Out (convex) into the world, in relationship to others, taking informed action from a sense of one’s own center. Each of the first six Steps (Inside/negative degree of freedom) sits opposite its counterpart in the second six (Outing/positive degree of freedom), making up 12° of Freedom.

There is no up and down in Universe, space travel has established that, although children are still taught “up” and “down” as if they are “real” concepts. The terms “good” and

# YIN-YANG AS TWO

- Synergetics I <sup>58</sup>



Clark, 1995

*“ ... there is a fundamental twoness that is not just that of opposite polarity, but the twoness of the concave and the convex, i.e., of the microcosm and of the macrocosm. We find that the nucleus is really two layers because its inwardness turns around at its own center and becomes outwardness.”*

Synergetics I: Explorations in the Geometry of Thinking<sup>59</sup>

“bad” are also remnants of those earlier ages, a belief in sin and a wrathful God of punishment. Fuller asks those who study him to be as precise in their language as possible, to discipline themselves to think objectively, scientifically and clearly about problems and their solutions, to design a Critical Path toward supporting all humanity

In 1969, when Neil Armstrong took “*One small step for man, one giant leap for mankind*” and looked out from the moon to “*SpaceshipEarth*,”<sup>60</sup> he and the other astronauts who had traveled in space before him (and since) have reported undergoing exponential leaps in their thinking about the way Universe operates. Their *experienced based knowledge* of how Earth and the moon look from out in space totally, irrevocably revolutionized their thinking about life on this small, blue planet and the G.O.D. of their understanding.

Steps 5 and 11 are most closely aligned to the principle of Inside/Outing. In Step 5, one goes within, to admit “*to God, to ourselves and another human being the exact nature of our wrongs*” and in Step 11, by seeking “*through prayer and meditation to improve ... conscious contact with God ....*”<sup>61</sup> (Inside/Outing) In DOING LIFE! the 12 Steps are pictured on a wheel to symbolize their ongoing forward movement.

Fuller used to have people “*sit in*” to and “*stand out*” from their seats in his workshops as a way to begin to think more accurately about their actions in Universe. He said the minimum number in Universe was two, that there was no concave without convex, no out without in. By training oneself to think more accurately, in terms of Inside/Outing, one might better discover the principles by which Universe operates. Fuller encouraged people to be very precise in their language, saying, “*Words are tools—and once you have learned how to use a tool you will never forget it. Just looking at the meaning of a word is not enough. If your vocabulary is comprehensive, you can comprehend both fine and large patterns of experience.*”<sup>62</sup> Fuller was very precise in his language, combining words when he could not find one that expressed exactly what he meant. While it can be frustrating, the discipline of clarifying Fuller’s terms leads to greater understanding and expansion of ideas. In response to a request by Anwar Dil in the book that records their conversations about his work, just before his death, Fuller’s poem on unity/duality in Universe, is on the facing page.<sup>63</sup>

My answering definition

Of UNIVERSE

Must be one which

*Embraced the combined*

*Metaphysical and physical*

*Components of UNIVERSE.*

“By Universe I mean:

The aggregate of all humanity’s

Consciously apprehended

And communicated

(to self and others)

*Experiences.”*

R. Buckminster Fuller  
Humans In Universe<sup>64</sup>

## **6. Precession**

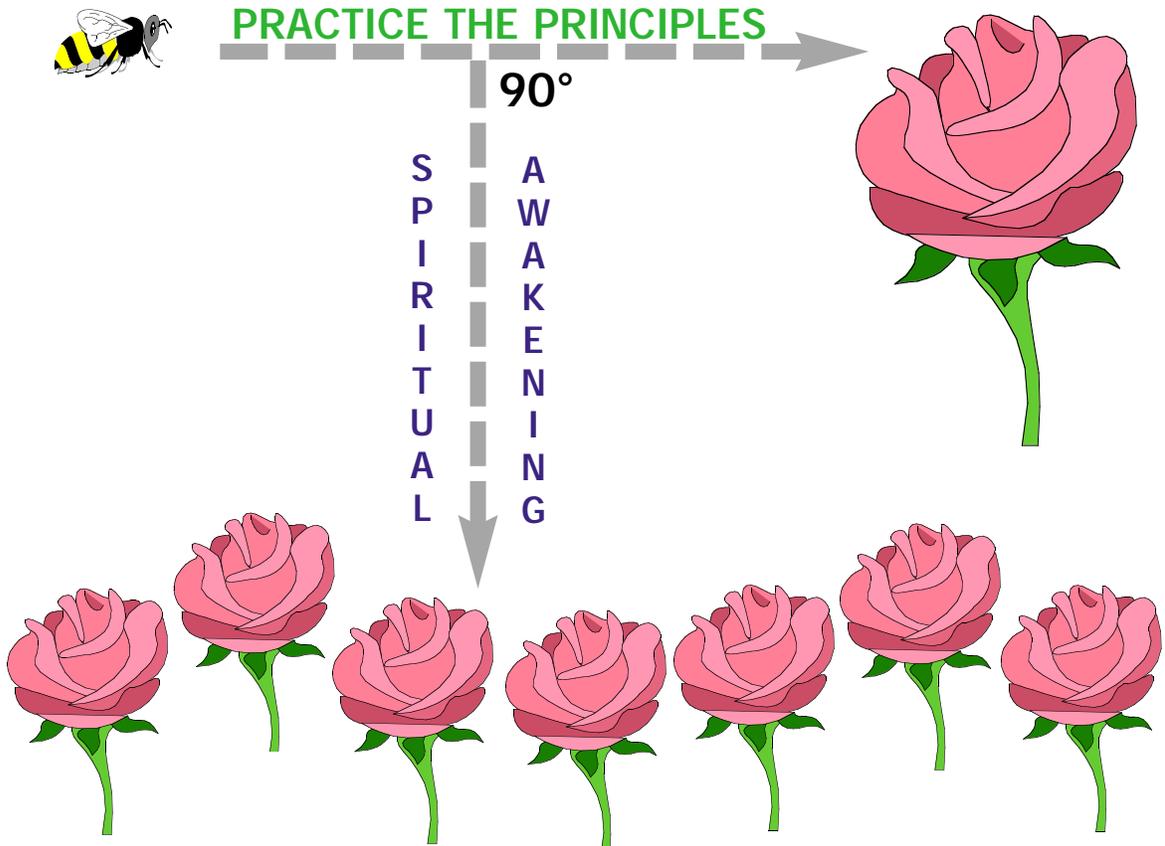
Precession is *“the motion of the rotation axis of a rigid body, as a spinning top, when a disturbing torque is applied while the body is rotating such that the rotation axis describes a cone with the vertical through the vertex of the body as axis of the cone and the motion of the rotation axis is perpendicular to the direction of the torque.”*<sup>65</sup> Precession is *“the effect of bodies in motion on other bodies in motion”*<sup>66</sup> The child pushes down repeatedly on the spring mechanism of the top, (Torque) causing it to move forward and turn faster while spinning on its axis. (Precession) The principle of Precession comes up repeatedly throughout all of Fuller’s work. He uses the bumblebee’s seeking nectar to make honey as an example of Precession in nature.

Humans, as *“honey-money gatherers,”*<sup>67</sup> move forward toward goals, often unaware of their true purpose (*side effects are main effects*)<sup>68</sup> in the grand design. Striving toward goals, forward momentum, creates opportunities to realize one’s purpose in the caretakership of this small, air-ocean planet. DOING LIFE! teaches a set of decision making strategies, integrated within the 12 Step workbooks, that teach addicts how to set and stick to goals while learning to live aligned with their true purpose.

Steps 6 and 12 demonstrate negative and positive degrees of freedom of the principle, Precession. In Step 6, having worked intensively with the first five Steps, by admitting mistakes, accepting that there is a force greater than oneself alone, a Good Orderly Direction to life, by taking a *“searching and fearless moral inventory”* and then admitting defects of character, one moves toward a deeper understanding of self, from Inside-Out. As a result of the work in the first five Steps, by Step 6 one is *entirely ready* for action. Step 6 says, *“We were entirely ready to have God remove these defects of character.”*<sup>69</sup> No longer do addicts seek to avoid, deny or hold on to old ways of thinking; they are *entirely ready* for change.

Step 12 says, *“Having had a spiritual awakening as a result of these steps, we tried to carry the message to others and practice these principles in all our affairs.”* The Precessional effect of practicing the principles of the 12 Steps *in all our affairs* is a *spiritual awakening*. Daily practice supports one to become a person of unshakable integrity, living a life of joy and freedom and that *spiritual awakening* strengthens the commitment to daily practice, a self-fulfilling feedback loop.

# PRECESSION



The honeybee makes 10,000,000 trips to make one pound of honey.<sup>70</sup>

*“... since economic machinery and logistics consist of bodies in motion, since precession governs the interbehaviors of all bodies in motion, and since human bodies are usually in motion, precession must govern all socioeconomic behaviors. Quite clearly humans do orbit at ninety degrees to the direction of their interattractions—orbiting elliptically around one another’s most attractively dominant neighbors, as do also galaxies within supergalaxies and all the stars, moons, comets, asteroids, stardust particles, unattached molecules, atoms, and the electrons within the atoms. All orbit their respectively most interattractively dominant nuclei of the moment. ...”<sup>71</sup>*

***“Your significance will remain forever obscure to you, but you may assume that you are fulfilling your role if you apply yourself to converting your experience to the highest advantage of others.”<sup>72</sup>***

### The Tetrahedron: Minimum Structural System In Universe

Fuller said, *“The four-cornered tetrahedron is the minimum structural system in Universe. It excludes all the irrelevant information of Universe and includes all the information relevant to the system.”*<sup>73</sup> The tetrahedron consists of three triangles joined, resulting in a fourth. Six vectors, three *“radiant divergence”* and three *“gravitational convergence”*, each with positive and negative polarities, are another representation of the six positive and six negative degrees of freedom. The illustration here integrates a practical application of the tetrahedron and *“the combined sciences of navigation and ballistics”* about which Fuller said:

*“I intuited that the combined sciences of navigation and ballistics might embrace all the variables governing Universe-event prognostication. It could be that (1) navy yard industrialization, (2) fleet operation and ship design, (3) astronavigation and (4) ballistics constituted the four ‘special case’ corner complexes of a generalized tetrahedral complex of variable design factors governing all human-mind-controllable participation in all cosmic, alternative-intertransforming potentials.”*<sup>74</sup>

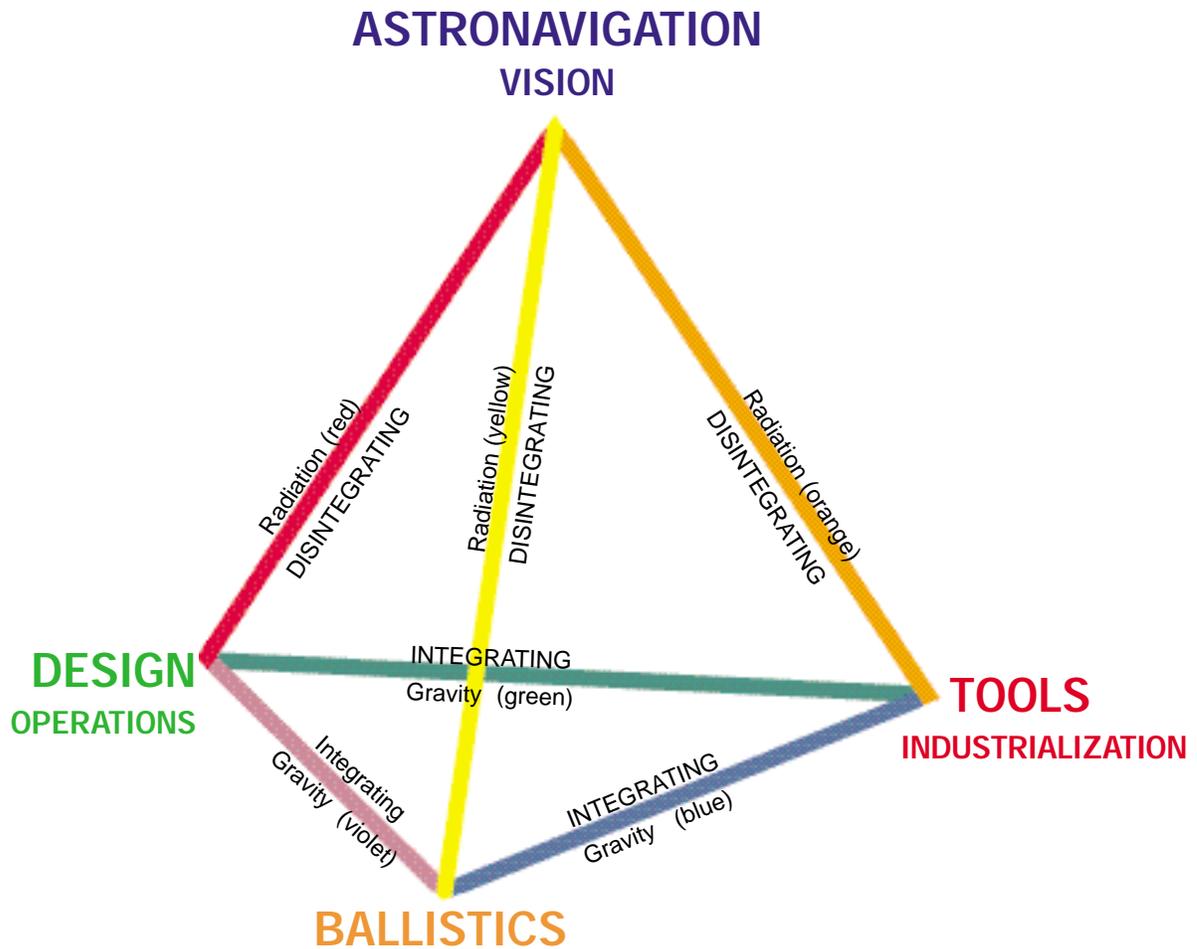
In COSMOGRAPHY: A Posthumous Scenario for the Future of Humanity, Fuller identifies the colors of the radiation vectors as red, yellow and orange, radiating from the Sun to the Earth, connecting at the three gravitational vectors of the Earth: purple, green and blue.

*“Universe has its radially explosive, compressional, outwardly pushing radiation and omniembracing, intertensing gravity. The total of cosmic radiation (compression) and the total of cosmic gravity (tension) comprise equal amounts of energy. Gravitation and radiation, however, operate differently. Their respective interpatternings differ. Radiation is beamable (i.e. focusable). Radiation has shadows, whereas gravity has none. ... Compression and radiation are always open-ended systems. Tension and gravity are always closed systems.”*<sup>75</sup>

The model presented here places the *combined sciences of navigation and ballistics* at the four corners of the Tetrahedron.

**Industrialization** refers to *“The number-one naval prognosticating science and art is that of designing and producing the generalized tools ... can produce both macro and micro special-case tools—with both the generalized and special-case tools operative at degrees of dimensional controls beyond that of human sight ... in temperature and*

# THE FOUR CORNERED TETRAHEDRON



*“Radiation is disintegrating energy—disintegrating because held together only at one end of each of its two-ended energy-magnitude-manifesting vectors. The disintegrating vectors’ free ends’ can be angularly aimed, i.e. focused.*

*Gravity is inherently integrated as a closed system of vectors with both ends of each attached to one end of each of the other two vectors, ergo with no open ends, ergo, constituting an inherently closed system having twice the coherence of the equal energy-magnitude-vecorded radiation.”<sup>76</sup>*

*pressure regions beyond humans' direct sensorially apprehending control.*"<sup>77</sup> The 12 Steps are a Tool for living a successful life.

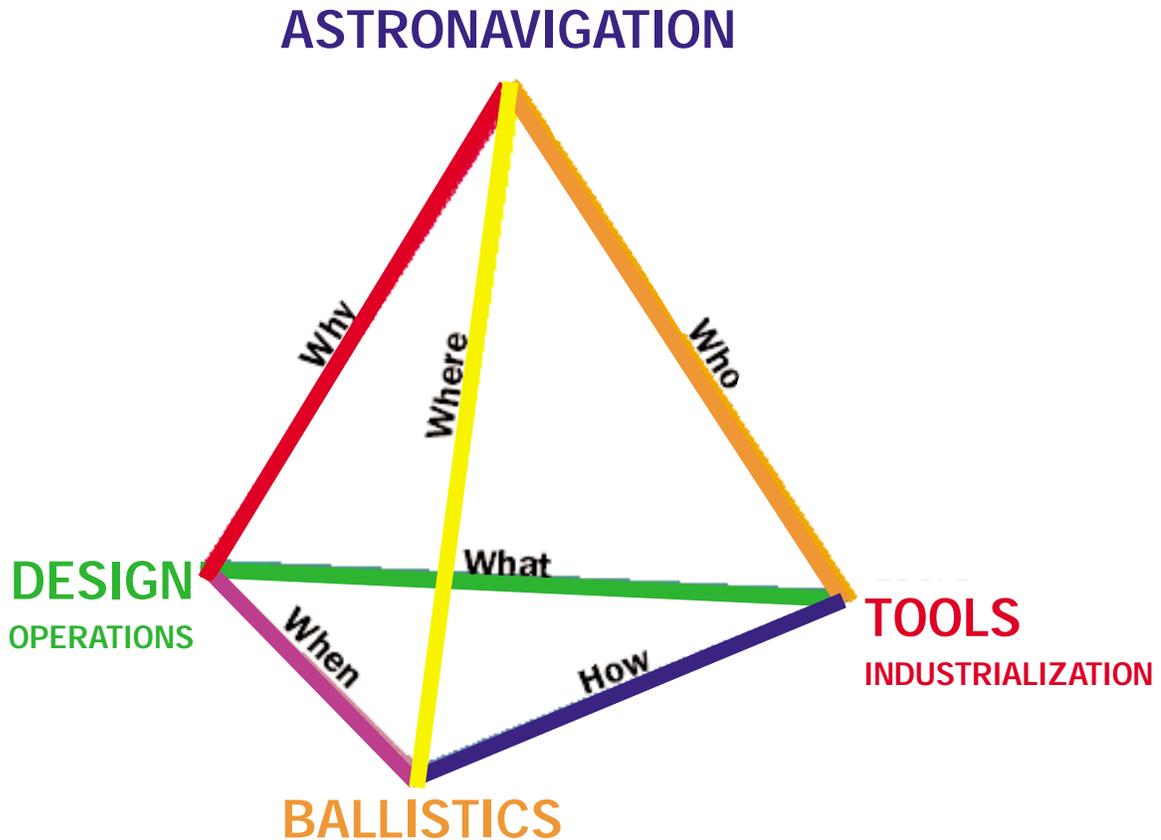
**Design** *"... is the ... prognosticating science and art ... in which, employing the ... tools, we design ... a complex of intersupportive technology capable of coping with ... conditions ... with the ... capability of integrating ... resources; and with the ability to protect ... against any and all ... hostile to class-two evolutionary phenomena."*<sup>78</sup> Again, the 12 Steps are a blueprint or Design, a plan for operating effectively in life.

**Astronavigation** *"...permits us to reliably prognosticate the arrival of our ship anywhere around the world at such and such an hour and on such and such a date."*<sup>79</sup> Astronavigation is the ability to create and hold a Vision of intended outcomes. Magellan first circumnavigated the globe, absent advanced technology, by keeping his eye on the North Star as he sailed at night, and by following the sun's unvarying East to West course during the day. The 12 Steps are Universal Principles, *"always and everywhere true"* for making one's Vision of sobriety a reality.

**Ballistics** *"—the art and science of controlling the trajectory of an explosively hurled missile.' Ballistics is divided into two parts—interior and exterior—. Interior ballistics deals with all the controllable variables governing the trajectory ... before the gun is fired; exterior ballistics deals with all the controllable variables after the gun is fired."*<sup>80</sup> Keeping one's equipment clean and in good working order and one's eye sighted on the intended target, making carefully calibrated corrections as the storms of life blow up, all result in success. The 12 Steps support those in recovery to remain on target, making course corrections immediately, **one step at a time.**

In the illustration on the facing page, the who, what, where, when, why and how of the *Planning Guide* for program development,<sup>81</sup> have been placed on the vectors of the tetrahedron, integrating the principles presented here into a clearly outlined Critical Path for both human and program development. All of these factors are discussed, in detail, throughout this document, particularly as the rationale for the methodology, design and operations of the TLE™ are presented in the chapter, *"Environment Is Stronger Than Will: Total Learning Environments™ in Prisons."*

# THE COMBINED SCIENCES OF NAVIGATION AND BALLISTICS



Clark, 1995

*“The tetrahedral structure system has six unique interrelationships existing among the system’s four unique groups of system variables.*

...

*... industrial tools are all the tools that cannot be produced by one human. Because it takes two humans to produce the need to communicate and to invent that means of communication, we say that the spoken word was the first industrial tool. ‘In the beginning’ [of industrialization—i.e., technologically effective human cooperation] was the word.”<sup>82</sup>*

### **The Tetrahedron As The Basis Of A Holistic Approach To Treatment**

The tetrahedron is the basis of the geodesic dome, a “most elegant use of space”<sup>83</sup> and Fuller’s Dymaxion Map of the earth, showing all land masses connected from North to South, with minimal distortion. The Dymaxion Map makes obvious the migration paths of ancestors on planet Earth and points to the connection of all races of humans, who share the same core DNA with all living species on the earth.

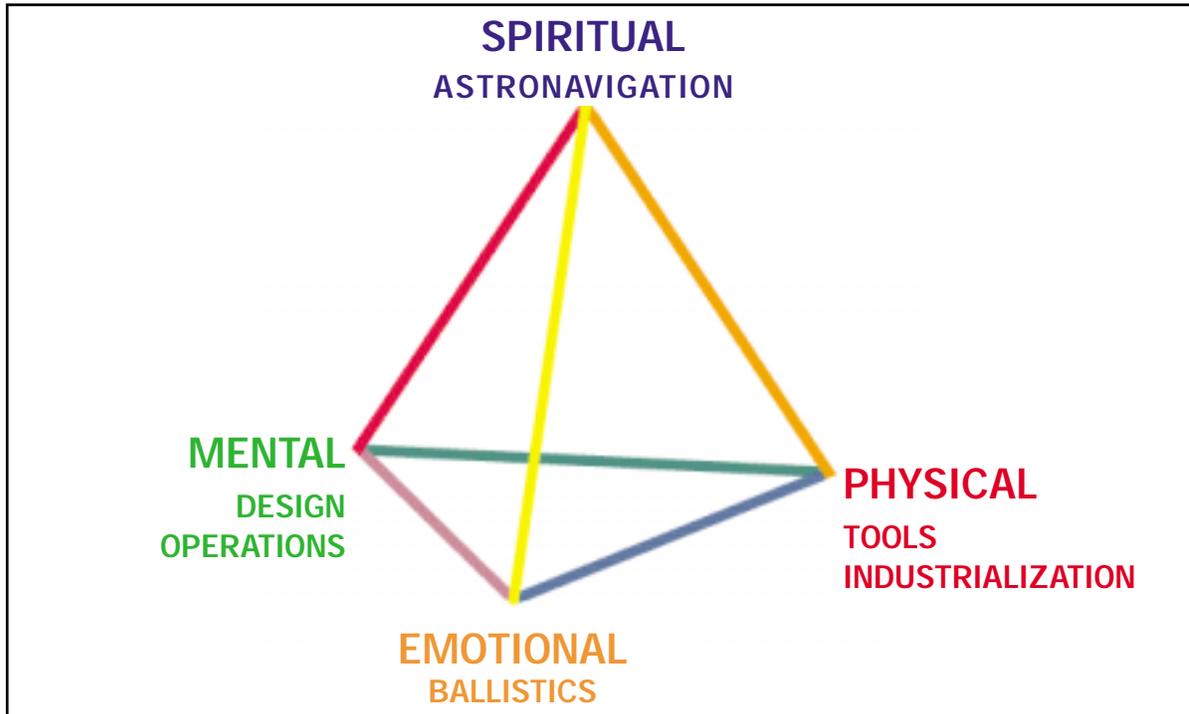


In Critical Path, Fuller presents his design science, integrating *the combined sciences of navigation and ballistics* into a comprehensive, step by step plan for the development of any successful project, most importantly, to nurture all life on the planet. Among his many skills, Fuller was an architect who designed elegant, energy-efficient, economical artifacts. Critical Path applies his skills as an architect to a design science for the future.

The *four ‘special case’ corner complexes of a generalized tetrahedral complex of variable design factors* are presented here as the Spiritual, Mental, Physical and Emotional dimensions of human beings that must be considered in any wholistic approach to treatment and education. The TLE™ include all of these dimensions in work with offenders. The illustration here shows how these concepts are applied in the development of TLE™ in correctional facilities and to the design and implementation of the DOING LIFE! and S.M.A.R.T. Choices! curricula.

**Spiritual** has to do with the human capacity for imagination, the ability to hold a Vision of of the future, based on core beliefs and values. Here is the human capacity to define values and hold to them. From this domain, humans have created formal-

## A HOLISTIC APPROACH TO TREATMENT



ized relationships to the vast mysteries of life, as religions, in an attempt to comprehend the grand design for Universe. From this domain humans have envisioned the invisible.

**Mental** includes the ability to think and solve problems, to apply abstract concepts and constructs to life situations, to invent and Design, to speak and write. This is the uniquely human capacity to think beyond the moment.

**Emotional** has to do with the human capacity to feel, to relate to others, to desire, to want more in life. When emotions get out of control, one loses focus on a vision. Here Ballistics is the capacity to manage and use feelings effectively to nourish the spirit, to maintain control of one's destiny.

**Physical** has to do with physical abilities, the capacity to build and use tools, with which to adapt to, and to adapt the physical environment. The physical domain is the human capacity for work and play, the ability to master the environment. Fuller said the first industrial Tool was the spoken word. Through words, humans have the ability to record history and to communicate with future generations.

## **12 Steps To Recovery**

The 12 Steps to Recovery were codified and published as a set of principles in the book, Alcoholics Anonymous.<sup>84</sup> No authors or editors were listed because of the commitment to protecting the privacy of the small group of 100 members who constituted the first fellowship formed by Bill W. and Dr. Bob, the acknowledged founders of Alcoholics Anonymous. As stated previously, it was the intuitive realization of the striking parallels between the 12 Steps and Fuller's Universal Principles, *always and everywhere true*, that resulted in DOING LIFE! The 12 Steps are also Universal Principles for living a life of freedom. They are:

1. *We admitted that we were powerless over our addiction, that our lives had become unmanageable.*
2. *We came to believe that a power greater than ourselves could restore us to sanity.*
3. *We made a decision to turn our will and our lives over to the care of God as we understood Him.*
4. *We made a searching and fearless moral inventory of ourselves.*
5. *We admitted to God, to ourselves and to another human being, the exact nature of our wrongs.*
6. *We were entirely ready to have God remove all these defects of character.*
7. *We humbly asked Him to remove our shortcomings.*
8. *We made a list of all persons we had harmed and became willing to make amends to them all.*
9. *We made direct amends to such people wherever possible, except when to do so would injure them or others.*
10. *We continued to take personal inventory and when we were wrong, promptly admitted it.*
11. *We sought through prayer and meditation to improve our conscious contact with God as we understood Him, praying only for knowledge of His will for us and the power to carry it out.*
12. *Having had a spiritual awakening as a result of these steps, we tried to carry the message to others and to practice these principles in all our affairs.*

# 12 STEPS TO RECOVERY



DOING LIFE! A Life Skills Curriculum for Recovery from Addiction

## **12° Of Freedom In The 12 Steps To Recovery**

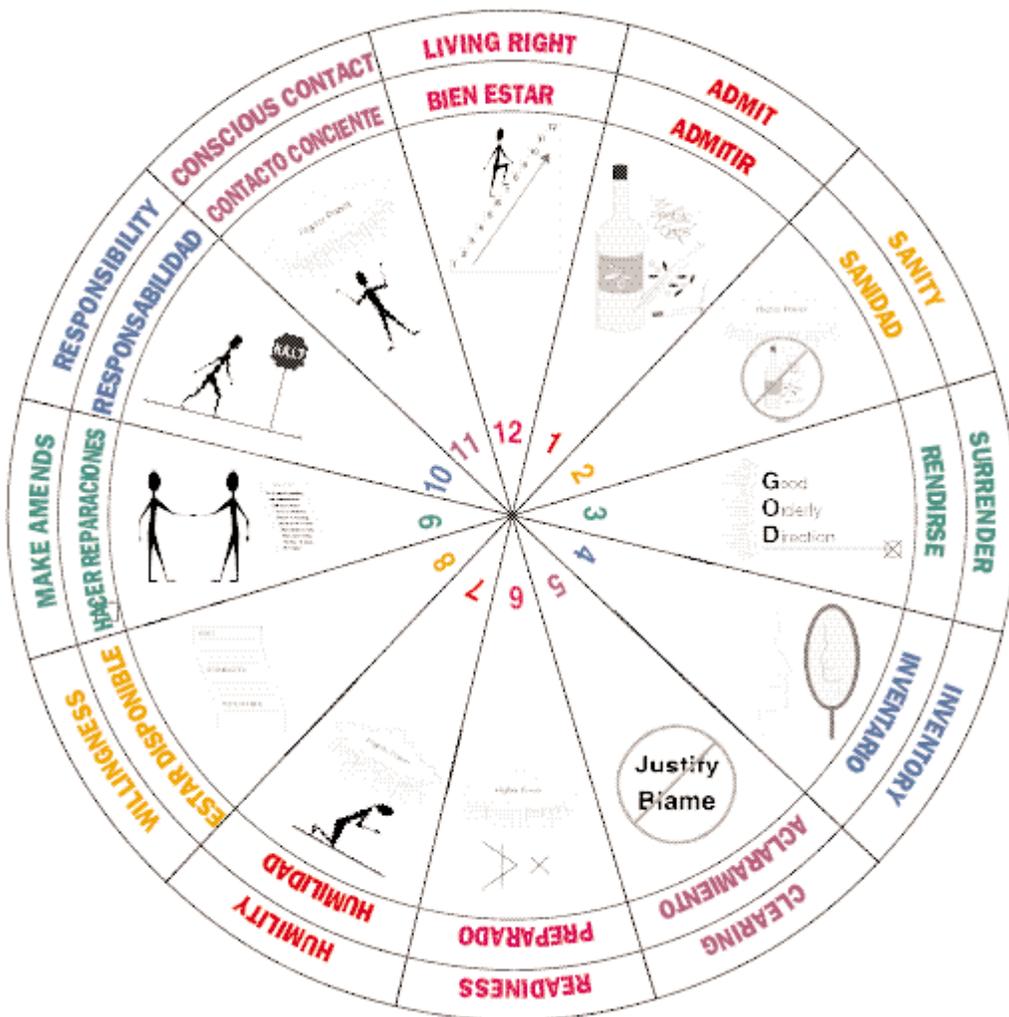
Note that the Steps begin with the word *we*. They are founded in the same fundamental principle Fuller speaks of when he says the minimum number in Universe is two, “*there is a fundamental twoness that is not just that of opposite polarity.*”<sup>85</sup> AA and NA say “*you can’t do it alone.*” The principle of Fellowship is basic to this system of Recovery. The power of the Fellowship produces extraordinary results.

Since Alcoholics Anonymous was published in 1939, thousands of books dealing with issues related to recovery from addiction have been produced, many precisely adhering to the fundamental principles of the “Big Book.” In recent years, some have opposed the 12 Steps as too rigid for more modern times. Some have resisted the 12 Steps based on the assumption that they constitute a formal religion. This opposition has gone so far as to end up in the courts, demanding legal rulings on the matter. This was another contributing factor to the decision to take a new look at these principles as humans move forward into the 21<sup>st</sup> Century. Intending neither a rewrite, nor a rejection of the 12 Steps, this work hopes to offer a fresh perspective on the principles underlying the Steps, a new twist, (*torque*) that can support others to use these very powerful principles as they were intended.

The illustration on the next page, reprising the cover sheet for this chapter, illustrates this new twist. As discussed in the introduction, relative to *six positive and six negative degrees of freedom*,<sup>86</sup> the 12 Steps are placed on a wheel, to emphasize the ongoing, cyclical nature of recovery. The first six Steps are the *six negative degrees of freedom*, encouraging those who take this path to move deeper and deeper within, to rediscover the essence of who they are, to restore themselves to their center, their axis from which they move outward. The second set of *six positive degrees of freedom*, balance the first, teaching how to live in relationship to others, in synergy, producing results “*unpredicted by the behavior of their parts when considered only separately.*”

The 12 Steps are a set of synergetic principles designed to address the whole person, the Mental, Physical, Emotional and Spiritual dynamics of being human. They are a set of fundamental transformation principles, universal in their application to any situation. They are, as Fuller said of the Universal Principles:

# 12° OF FREEDOM IN 12 STEPS TO RECOVERY



“...six positive and six negative degrees of fundamental transformation freedoms, which provide 12 alternate ways in which nature can behave economically upon each and every energy-event occurrence.”<sup>87</sup>

The 12 Steps are a system that prepare addicts and alcoholics to handle any and all situations, stresses or challenges that affect their lives in the most *economically* effective way possible. Indeed, the 12 Steps are applicable to anyone, in any life situation. They are basic guidelines for responsible behavior.

### **God As Universal Principle**

No discussion of the 12 Steps is complete without a discussion of the concept, “*God as we understood Him.*” This is one of the most controversial ideas in the 12 Steps to Recovery. “*God as we understood Him*” in the 12 Steps has been the focus of debate since the 12 Steps were first formally published in the “Big Book” in 1939. The idea of *God as we understood Him* is fundamental to the 12 Steps philosophy of recovery. God is named directly in four of the 12 Steps (3, 5, 6, 11) and referenced in Steps 2 and 7. All of the Steps are concerned with *spiritual awakening*.

The very word, *God*, is highly personal and fraught with emotional baggage. Every culture, every human being, on this planet is defined by acceptance, rejection or denial of the idea of God. There are as many ways to understand God as there are people on the planet. The idea of God both unites and divides humanity. More wars have been fought over this concept than any other. That the idea of God is controversial is evident in the vast amount written on the subject since recorded history began. Despite the pervasive belief in some kind of Supreme Being throughout all countries in the world, it is *the terms in which we are conditioned to think* that limits clarity and inhibits understanding of this basic tenant of faith. Perhaps more than any other, belief in God is fraught with *Dark Ages thinking*. Chapter 29: GOD, in The Great Ideas<sup>88</sup> is introduced as the largest chapter in the Syntopicon.

*“... In sheer quantity of references, as well as in variety, it is the largest chapter. The reason is obvious. More consequences for thought and action follow from the affirmation or denial of God than from answering any other basic question. They follow for those who regard the question as answerable only by faith or only by reason, and even for those who insist upon suspending judgment entirely.”* <sup>89</sup>

AA and NA have always approached the idea of God as a private, personal choice and do not require a belief in God as a requisite for membership. Therefore, the phrase, *as we understood Him*, encourages much flexibility and invites addicts to think for themselves about this concept. DOING LIFE! explains the principle one way by referencing the power of a group in accomplishing any task, including the support of a **Group Of Drunks** or **Drug Addicts** in recovery. The quote from Drill Instructor Machmer who worked at the Willard Drug Treatment Campus, sums up the essence of what is taught in the TLE™.

*“... God As **We** Understood Him ...”*

**G**OOD  
*ROUP*

**O**RDERLY  
*F*

**D**IRECTION  
*RUNKS*  
*RUG ADDICTS*

**G**ood **O**l' **D**iscipline

- D.I. Machmer, Willard DTC

Webster's Third New International Dictionary defines God as:

**God ...n:** *the supreme or ultimate reality: the Deity variously conceived in theology, philosophy, and popular religion ... a (1): the holy, infinite, and eternal spiritual reality presented in the Bible as the creator, sustainer, judge, righteous sovereign and redeemer of the universe who acts with power in history in carrying out his purpose <...Hebraic ... Jehovah ...> 2. the eternal, invisible, arbitrarily omnipotent Lord of the worlds and final judge of all men presented in the Koran as all-knowing, just, compassionate, merciful, and unchangeable ... b (1): the unchangeably perfect Being that is the first and final cause of the universe ... (2): the whole of the universe in its unity ... (4): the creative, integrative, and redemptive process at work in the world that is the supremely worthwhile actuality of all existence and upon which all other forms of existence depend for life, meaning, freedom, purpose, value, and the realization of their highest destiny ... (5): the one ultimate infinite reality that is pure existence, consciousness, and bliss without distinctions (as of time and space) ... (6): infinite Mind: the incorporeal divine Principle ruling over all as all-wise, all-loving, and eternal; Principle, Mind; Soul; Spirit, Life; Truth; Love; all substance; intelligence — ...; c (1): the Being supreme in power, wisdom, and goodness that men worship and to whom they pray ...; (2): the ideal or essence of what is best in human life*<sup>90</sup>

In Critical Path, Fuller says, “Acknowledging the mathematically elegant intellectual integrity of eternally regenerative Universe is one way of identifying God. ... God may also be identified as the synergy of the interbehavioral relationships of all the principles unpredicted by the behaviors or characteristics of any of the principles considered only separately.”<sup>91</sup> As did Albert Einstein, Fuller, scientist and mathematician, established an experiential, scientific basis for a belief in God. Fuller wrote several versions of “EVER RETHINKING THE LORD’S PRAYER” that express his personal understanding of God. One section of this prayer has already been quoted here on page 247. On the next two right-hand pages, is presented Fuller’s definition of God as expressed in this prayer. Fuller experienced **Good Orderly Direction** in all life and found proof of God in every aspect of nature, science and synergetics. He introduces his “*declaration*” by saying:

*“I am confident, contrary to the Russian assumption that science invalidated all possibilities of the existence of God, that, as specifically argued, my following declaration constitutes a scientifically meticulous, direct experience based proof of God.”*<sup>92</sup>

## EVER RETHINKING THE LORD'S PRAYER

July 12, 1979

*To be satisfactory to science  
all definitions must be stated in terms of experience.*

...  
*In using the word, God I am consciously employing  
four ... experience-engendered thoughts.*

*Firstly I mean:—  
those experience-engendered thoughts  
which are predicated upon past successions  
of unexpected, human discoveries  
of mathematically incisive, physically demonstrable  
answers to what theretofore had been misassumed  
to be forever unanswerable cosmic magnitude questions  
wherefore I now assume it to be scientifically manifest,  
and therefore experientially reasonable that  
scientifically explainable answers  
may and probably will eventually be given  
to all questions as engendered in all human thoughts  
by the sum total of all human experiences;  
wherefore my first meaning for God is:—  
all the experientially explained  
or explainable answers to all questions of all time—*

*Secondly I mean:—  
The individual's memory of many surprising moments  
of dawning comprehensions of an interrelated significance  
to be existent amongst a number of what had previously  
seemed to be entirely uninterrelated experiences  
all of which remembered experiences  
engender the reasonable assumption  
of the possible existence of a total comprehension  
of the integrated significance—  
the meaning— of all experiences.*

There are those who dismiss Fuller's definition of God as "*Secular Humanism*," missing his meaning because of the precise scientific language in which he expressed his beliefs, rather than the more traditional language of a particular faith. Certainly he did his best to overcome the confinement and artificial limits he experienced as the *Dark Ages* concept of an anthropomorphic God. He experienced this *Dark Ages* concept of God as one which contributed to prejudice, hatred and the narrow thinking that leads to "religious" wars. Fuller was opposed to war, believing it to be a product of a failed belief in the Universal Principles operative in Universe, guaranteeing abundance for all. He urged that the Tools and artifacts of war, "*weaponry*," be converted to Tools for "*livingry*," to support all humanity. His four-part definition of God is an expression of the generalized principles governing Universe.

Rather than limiting God to a "heavenly Father", Fuller experienced a direct, intense personal relationship with the "*the cosmic integrity and absolute wisdom we identify inadequately by the name "God" (that) speaks to each of us directly ....*"<sup>93</sup> Fuller heard the voice of God in all with whom and with which he was associated.

He would frequently speak of his profound, life changing experience as he was about to drown himself in Lake Michigan, an impoverished failure at age 32, unable to care for his wife and precious second daughter, after having lied to and failed his beloved first daughter who died of spinal meningitis at age 4. He used to tell the story of hearing the voice of God saying to him, "*You do not belong to you. You belong to the Universe.*" He said he realized at that moment that he had no right to the cowardly escape of suicide, rather, he *came to believe* (the exact words of Step 2) that as long as he listened to nature, God, the feedback of Universe, he would stay on the right path. He resolved on that day to devote himself to the betterment of all humanity and did so for the next 56 years of his life. He would say later that he found that the more people he attempted to serve, the more effective he became. By attempting to serve all humanity, thus he was maximally effective.

Fuller's proof for the effectiveness of his decision was that he never attempted to "*earn a living*" once he committed himself to turning his will and his life over to the care of God as he understood Him, yet he and his family were well provided for by funds received from his lectures, inventions and artifacts.<sup>94</sup>

*Thirdly I mean:—*

*the only intellectually discoverable  
a priori, intellectual integrity  
indisputably manifest as the only mathematically statable  
family of generalized principles— cosmic laws —  
thus far discovered and codified  
and ever physically redemonstrable by scientists  
to be not only unfailingly operative  
but to be in eternal, omni-interconsiderate,  
omni-interacomodative governance  
of the complex of everyday, naked-eye experiences  
as well as of the multi-millions-fold greater range  
of only instrumentally explored infra- and ultra-tunable  
micro- and macro- Universe events.*

*Fourthly I mean:—*

*All the mystery inherent in all human experience,  
which, as a lifetime ratioed to eternity,  
is individually limited to almost negligible  
twixt sleepings, glimpses of only a few local episodes  
of one of the infinite myriads  
of concurrently and overlappingly operative  
sum-totally never-ending cosmic scenario serials.*

...

*Your eternally regenerative scenario Universe  
is the minimum complexes of total intercomplementary  
totally intertransforming, nonsimultaneous,  
differently frequenced and differently enduring  
feedback closures of a finite but nonunitarily  
nonsimultaneously conceptual system  
in which naught is created and naught is lost  
and all occurs in optimum efficiency.*

*Total accountability and total feedback constitute  
the minimum and only perpetual motion system.  
Universe is the one and only eternally regenerative system.*

*To accomplish Your regenerative integrity  
You give Yourself the responsibility of eternal,  
absolutely continuous, tirelessly vigilant wisdom.*

## **Spiritual Principles**

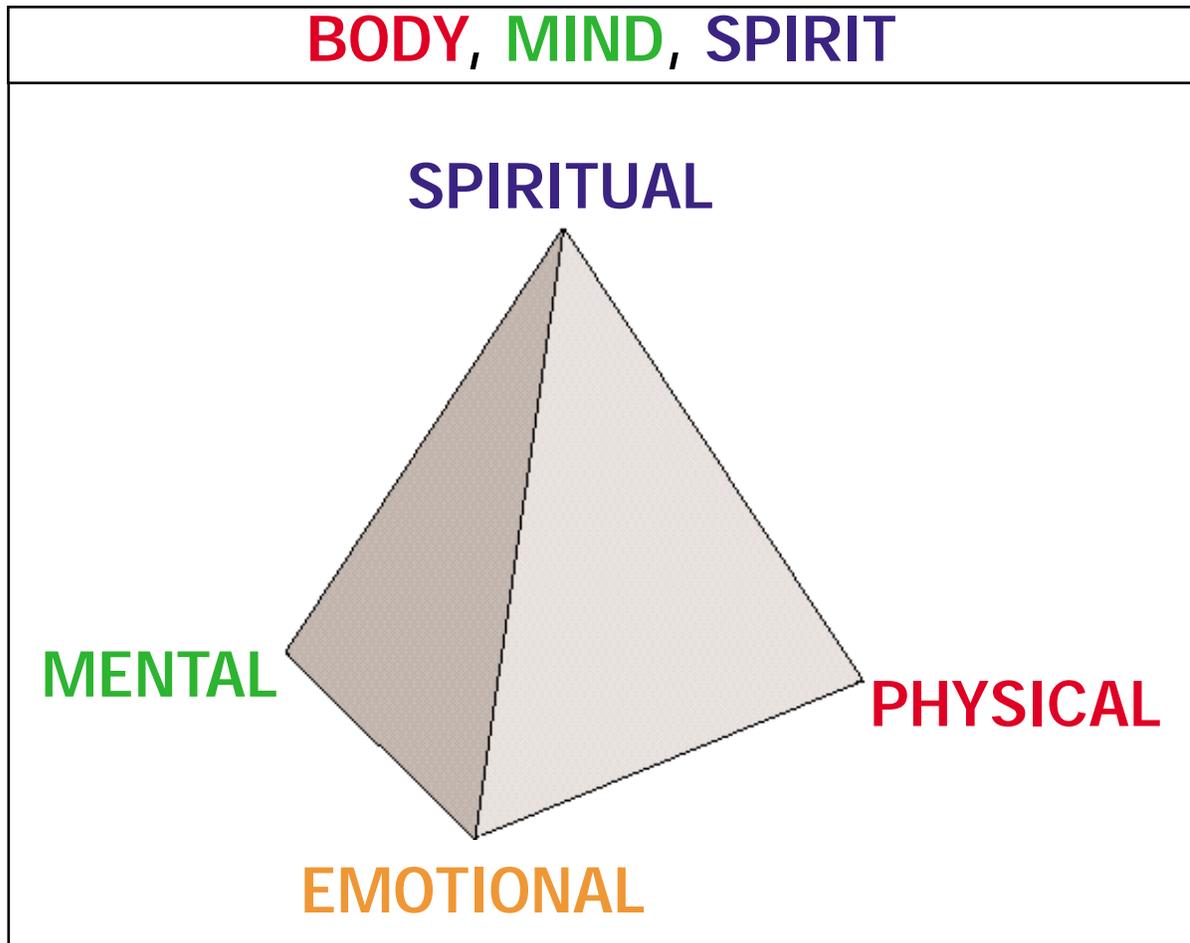
While committed to the physical, emotional and psychological aspects of recovery, the core of Alcoholics Anonymous is spiritual, the invisible essence that transcends all life. In *Chapter 4, We Agnostics*, there is a discussion of the issue for those who do not believe in God, conservatively estimated to be at least half of those who approach AA and NA as a way out of the misery their addiction has caused them. According to the authors of Alcoholics Anonymous,

*“... we have written a book which we believe to be spiritual as well as moral. And it means, of course, that we are going to talk about God. Here difficulty arises with agnostics. Many times we talk to a man and watch his hope rise as we discuss his alcoholic problems and explain our fellowship but his face falls when we speak of spiritual matters, especially when we mention God, ...*

*We know how he feels. We have shared his honest doubt and prejudice. Some of us have been violently anti-religious. To others, the word ‘God’ brought up a particular idea of Him with which someone tried to impress them during childhood. Perhaps we rejected this particular conception because it seemed inadequate. ... we imagined we had abandoned the God idea entirely.”<sup>95</sup>*

Dr. William D. Silkworth, revered as “... no less than a medical saint ...” by AA members, defined alcoholism as a physical, mental, emotional and spiritual malady, requiring attention to all of those dynamics, especially the spiritual dimension. He documented hundreds of examples of recovery through AA.

*“We doctors have realized for a long time that some form of moral psychology was of urgent importance to alcoholics, ... Of course an alcoholic ought to be freed from his physical craving for liquor, ... before psychological measures can be of maximum benefit. ... We believe, ... that the action of alcohol on these chronic alcoholics is a manifestation of an allergy, ... These allergic types can never safely use alcohol in any form at all; and once having formed the habit and found they cannot break it, once having lost their self-confidence, ... their problems pile up on them and become astonishingly difficult to solve. ... The message which can hold these alcoholic people must have depth and weight. ... their ideals must be grounded in a power greater than themselves, if they are to re-create their lives. ... unless this person can experience an entire psychic change there is very little hope of ... recovery. ... once a psychic change has occurred, the very same person who seemed doomed, who had so many problems he*



*despaired of ever solving them, suddenly finds himself easily able to control his desire for alcohol ...*

*... something more than human power is needed to produce the essential psychic change. ... Many types do not respond to the ordinary psychological approach. ... I do not hold with those who believe that alcoholism is entirely a problem of mental control. ... drinking to overcome a craving beyond their mental control ... emotionally unstable ... over-remorseful ... make many resolutions, but never a decision. ... Then there are types entirely normal in every respect, except in the effect alcoholism has on them ... able, intelligent, friendly people.”<sup>96</sup>*

As discussed in Chapter 29 of The Great Ideas,

*“The whole tenor of human life is certainly affected by whether men regard themselves as the supreme beings in universe or acknowledge a superior — a superhuman being whom they conceive as an object of fear or love, a force to be defied or a Lord to be obeyed.”<sup>97</sup>*

**"... a Power greater than ourselves ..."**

Step 2 first introduces the Spiritual basis of the 12 Steps. It says, "We came to believe that a Power greater than ourselves could restore us to sanity." This is a challenging concept, especially for those who have just had to admit in Step 1 that they were "... powerless over ... addiction" and that their lives had become "unmanageable" as a result. The authors of Alcoholics Anonymous themselves struggled with Step 2:

*"... We were bothered with the thought that faith and a dependence upon a Power beyond ourselves was somewhat weak, even cowardly. We look upon this world of warring individuals, warring theological systems, and inexplicable calamity, with deep skepticism. ... How could a Supreme Being have anything to do with it all? And who could comprehend a Supreme Being anyhow? Yet in other moments, we found ourselves thinking, when enchanted by a starlit night, 'Who, then, made all of this?'"<sup>98</sup>*

These were the war years, between World War I, in which Bill and Dr. Bob had served, and the stirrings of World War II in Europe. Hitler had begun his move to power and Bill was trying to reconcile the evil and hatred that seemed to be spreading in the world and the notion of a God who could allow men to kill other men. It was during this time that Reverend Paul Tillich was also struggling with these issues and would come to address them in his sermons.<sup>99</sup> In the sermon, "You Are Accepted," discussed earlier in the Review Of Literature, Tillich was able to reconcile this dilemma for himself by reflecting on the Letter of Paul to the Romans:

*"Moreover the law entered, that the offence might abound.  
But where sin abounded, grace did much more abound."*

ROMANS 5 : 20

This is the same section of the Christian Bible that Warden Burl Cain of Angola Prison reads with those for whom he has to perform the sad task of execution.<sup>100</sup> Bill W. says of accepting "...a Power greater than ourselves ...":

*"The practical individual of today is a stickler for facts and results. Nevertheless, the twentieth century readily accepts theories of all kinds, provided they are firmly grounded in fact. We have numerous theories, for example, about electricity. ... Why this ready acceptance? Simply because it is impossible to explain what we*

*see, feel, direct, and use, without a reasonable assumption as a starting point.”<sup>101</sup>*

The idea of “...a Power greater than ourselves ...” has been debated by philosophers throughout history. Aristotle is quoted in The Great Ideas as he ponders the existence of a “prime mover” in his *Metaphysics*.

*“Aristotle holds that the prime mover, in addition to being everlasting, must be immutable. This for him means ‘a principle whose very essence is actuality. ... for the actuality of thought is life, and God is that actuality; and God’s self-dependent actuality is life most good and eternal.’ ... Where Aristotle argues from motion and potentiality to a prime mover and a pure actuality, Newton gives the a posteriori proof another statement by arguing from the design of the universe to God as its designer or architect. ... ‘all that diversity of natural things which we find suited to different times and places could arise from nothing but the ideas and will of a Being necessarily existing.’”<sup>102</sup>*

Bill W. says of himself:

*“I had always believed in a Power greater than myself. I had often pondered these things. ... My intellectual heroes, the chemists, the astronomers, even the evolutionists, suggested vast laws and forces at work. ... I had little doubt that a mighty purpose and rhythm underlay all. How could there be so much of precise and immutable law, and no intelligence? ...”<sup>103</sup>*

Fuller similarly addresses this issue throughout his writings:

*“I asked myself whether I had any direct experiences in life that made me have to assume a greater intellect than that of humans to be operative in Universe. I immediately referred back to my good education in the sciences and my directly experienced learning of the operation of physical laws—such as the interaction of celestial bodies, ... which laws could only be expressed in purely intellectual terms of mathematics, ... None of the eternal and always concurrently operative laws had ever been found to contradict one another—ergo, they were all designedly intercomodative like a train of gears. ... I am o’erwhelmed by the only experientially discovered evidence of an a priori eternal, omnicomprehensive, infinitely and exquisitely concerned, intellectual integrity that we may call God, though knowing that in whatever way we humans refer to this integrity, it will always be an inadequate expression of its cosmic omniscience and omnipotence.”<sup>104</sup>*

## Synergetics in Treatment

As introduced earlier, Fuller said *“Synergy means behavior of whole systems unpredicted by the behavior of their parts when considered only separately.”* Synergetics is the study of whole systems. *“Human organisms are systems. They are complex but very important systems of energetically operative integral tools. ... How apt a name for the human organism is ‘an interior and exterior metabolic system’ ...”*<sup>105</sup>

The Synergetic approach to the treatment of addiction discussed here is based in a holistic approach to people as *whole systems*, biologically based, with needs, drives, thoughts, beliefs, ideas, feelings and desires. As Fuller describes the evolution of humans on the planet, he says:

*“Physiology and biology make it clear that at the outset of graphically recorded history a universally illiterate—but probably not unintelligent—humanity was endowed with innate and spontaneously self-regenerative drives of hunger, thirst, and species regeneration. The ... synergetic designing of these innate drives apparently was instituted by a wisdom—a formulative capability inherent in Universe—higher than that possessed by any known living humans. These drives were probably designed into humans to ensure that human life and the human mind ... would discover its own significance and would become established and most importantly operative not only aboard planet Earth, but also in respect to vast, locally evidenced aspects of Universe. As such, mind may come not only to demonstrate supremacy over humanity’s physical muscle but also to render forevermore utterly innocuous and impotent the muscle-augmented weapons ....*

*Mind, operative aboard our planet Earth and probably elsewhere in Universe in a myriad of effective circumstances, can and may perform the paramount function of conserving the scenario ‘Universe.’ If so, it will have to be accomplished by apprehending, comprehending, and teleologically employing the metaphysical, weightless, omni-intercooperative generalized principles of Universe ...”*<sup>106</sup>

Therefore, the systems approach presented here accounts for the innate intelligence of all humans, including addicts and alcoholics, though admittedly they are numbing and dulling that fundamental gift of life with drugs including alcohol. This approach begins from the premise that all humans have an inherent drive to get their basic biological needs met and that mental, emotional

and spiritual drives are equally important. Given that operating premise, this model approaches addiction as an inefficient, ineffective attempt to get needs met. Control Theory offers practical strategies to help all addicts (including alcoholics) learn how to get needs met effectively and efficiently.<sup>107</sup> Any system that attempts to work with human beings cannot afford to approach them as if they simply have, or are a “problem” to be solved. This fragments the individual and reduces him or her to less than human.

As discussed in the previous chapter, *Every Day In America*, there is much made of the nature/nurture debate in discussing criminal behavior, as if criminal behavior might be solely a product of a person’s genes, or is strictly the result of a faulty environment. This debate results in a fragmented approach to “solving” the “problem” of addiction. The approach here presents addiction as a poor *solution* to getting needs met, as a result of denying some aspect of one or more of the dimensions that contribute to the total human being. An approach based in Synergetics must include all dimensions of human beings, Body, Mind, Emotions, Spirit, and cannot ignore any aspect of a complete human being. The 12 Steps as Universal Principles, account for the Physical, Mental, Emotional and Spiritual dimensions of the whole person, caught in the insanity of addiction.

There have been many approaches to addictions treatment and corrections based in fragmented approaches to offenders. As a result, treatment fads come and go. Methods are tried and discarded based on whether or not they can be “proved” to “work.” Robert Martinson's thoughtful study, *“What Works? - Questions and Answers About Prison Reform”* attempted to review just what was working in the prison system, to effectively intervene with those incarcerated. He found that results depended on many complex factors, including the training and skill of the staff, support from the leadership, and the commitment of the inmate participants to their own change.<sup>108</sup>

His conclusion that no one thing worked for everyone was tragically misinterpreted and became a rallying cry for those who would lock up anyone convicted of a crime, for increasingly longer periods of time. Their justification is that if *“nothing works”* to change offenders, then the only option is to keep convicted felons behind bars for life. One main problem with this assumption is that no one has to think about the issues, the system, or take responsibility for change. The “blame” can be placed on “them”, even on “their” genetic structure.

In his article, "*Treatment Destruction Techniques*", Michael Gottfredson discussed strategies used to undermine effective treatment interventions.<sup>109</sup> He listed five strategies guaranteed to undermine any treatment program. In brief, he says that one can always show that programs are not effective by suggesting "*that the effect reported ... was due to some treatment other than that suggested by the authors of the study.*"

Next, attack the accuracy of the measurement criteria on which studies are based. Third, "*appeal to common sense*" by showing rising crime rates, accompanied by growth in the prison population, despite "*massive efforts*" to rehabilitate offenders. Attacking the theory on which treatment efforts are based is a fourth, very effective treatment destruction technique discussed in that paper.

Finally, when all else fails, "*seek universals.*" If it works for 20, it must work for 2,000 or 20,000 or 200,000 in order to be really effective. In fact, no one thing can or should be expected to work for everyone, yet people seeking "quick cures" or "easy" solutions will persist in trying to find **THE SOLUTION** to the overwhelming challenges of criminal justice and addiction treatment. The lesson of the 12 Steps is that no one likes to feel powerless, thus the first step is so difficult to take. Yet, the persistence of addiction as a world problem and the escalation of the prison population leads people to seek a "*final answer.*"

Technology has advanced to the stage where research attempts to "prove" or "disprove" the ideas and opinions set forth by those presenting the data as objective "facts" through an abundance of statistical measures. While results are often touted as "undisputed," debates rage on, with the next study contradicting the "undisputed" results of the one before. Gottfredson concludes his paper by saying:

*"If a combination of these destruction techniques does not convincingly destroy a positive research report, it is possible to borrow the ultimate destruction technique from Bailey's article, 'Correctional Outcome: An Evaluation of 100 Reports (1966: 156):'*

*'When one recalls that these results, ... **are based on the conclusions of the authors of the reports,** ... then the implications ... regarding the effectiveness of correctional treatment become rather discouraging.'* (Emphasis added)"

One destruction technique not mentioned in Gottfredson's article is the tendency for people to observe, study and even say they wish to emulate an effective model, "*but*" without the part that

does not appeal to them, whatever that may be. This happens repeatedly with visitors to the Shock Incarceration program.

Officials come, admire the comprehensive nature of the model, and publically announce that they are “*doing the ‘New York’ model*” because of the legitimacy it gives them, yet will eliminate a key component because, “*We don’t see a need for ... discipline ... treatment ... 12 Steps ... etc.*” They then can and do blame “New York” when their model does not produce the same results, saying, “*We’re doing the ‘New York’ model, guess it doesn’t work any better than the others.*” The problem is a result of a focus on reform of the people, rather than what is truly the “New York” model, a focus on Total Learning Environments™ that support all individuals, staff and inmates alike, to be the best they can be. This is the more difficult challenge. It is easy to blame “*them*”; it is far more challenging to shift one’s thinking to accepting each individual, including criminals and addicts, as a manifestation of the “*cosmic (divine) design*” and shift to reform of the environment.

Studies continue to be funded, to find once and for all, a “cause” of addiction, of crime and criminal behavior. Millions of dollars are spent to test pilot programs focusing on rehabilitation, education, vocational training, work release, drug and alcohol treatment and/or education as independent variables. Initial enthusiastic reports about the efficacy of the latest approach are replaced by critics pointing out the “obvious” flaws in the study.

To reduce one human being, even an addict or a criminal, to “a problem” to be “solved” in a particular area, diminishes all human beings. When one approaches every human being from a wholistic perspective, it honors the uniqueness of all others. Addressing the whole person as capable of learning and succeeding, no matter what their genetic makeup or the challenges in the environment, offers opportunities for growth and success.

*“Synergy means behavior of integral, aggregate, whole systems unpredicted by behaviors of any of their components or subassemblies of their components taken separately from the whole.*

...

*The words synergy (syn-ergy) and energy (en-ergy) are companions. ... synergy represents the integrated behaviors instead of all the differentiated behaviors of nature’s galaxy systems and galaxy of galaxies.”<sup>110</sup>*

## **12 Stages of Healing**

Evidence of a Universal Principle is that it shows up in many different areas. In his book, The 12 Stages of Healing: A Network Approach to Wholeness,<sup>111</sup> Dr. Donald Epstein, who developed Network Chiropractic, explains his approach to health and healing.

*“Healing has little to do with the removal of symptoms. ... it involves the harmonious alignment of the physical, emotional, mental and spiritual aspects of our being and how we relate to the world. The result is a greater experience of wholeness, wellness and soundness. And wholeness is the birthright of every living being.”<sup>112</sup>*

In language that closely parallels both the 12 Steps to Recovery and Fuller’s discussion of Universal Principles, Epstein explores the Bodymind connection in recovery from illness and maintaining wellness. He links myth and fairy tales to each of the stages of healing, discussing the generalized principles manifested in the great legends and tales that appeal to generations because of their profound truths and broad applications. The chart on the facing page lists the 12 Stages of Healing as Epstein names them and shows the parallels to the 12 Steps to Recovery and the 12° of Freedom. The Lessons of Each Stage are those Epstein discusses in his book, based in his understanding of the power of myth and fairy tales, informed by his study of Dr. Bruno Bettelheim’s work as a child psychiatrist.<sup>113</sup>

Though unfamiliar with Epstein’s approach during the writing of DOING LIFE!, the parallels are so striking, they warrant acknowledgement. This system also serves as an affirmation of the generalized principles Fuller spoke of as *“always and everywhere true.”* Each stage of healing corresponds exactly to the lesson of the same step to recovery. Epstein works with the bodymind connection through the breath, posture, spinal alignment and movement to support his patients to learn the lessons of each stage, emphasizing that the body has a way of “holding on” to trauma and can also learn to “let go” when correct methods are practiced. DOING LIFE! also uses guided breathing techniques to help participants focus on the lesson of the Step and since learning Epstein’s strategies, his breathing techniques have been taught to staff and in turn passed on to participants as tools for integrating the lessons of the step.<sup>114</sup>

One important note, one does not become an addict overnight, nor should one expect to recover “instantly.” Healing takes time, attention and commitment. It is a journey to be savored and enjoyed, not a destination to be arrived at and completed.

<b>UNIVERSAL PRINCIPLES IN HEALING</b>				
	<b>12 STEPS TO RECOVERY</b>	<b>12 STAGES OF HEALING</b>	<b>LESSON OF STAGE</b>	<b>DEGREE OF FREEDOM</b>
<b>1.</b>	<b>ADMIT TO BEING POWERLESS</b>	<b>SUFFERING</b>	<b>DEATH HANSEL &amp; GRETEL</b>	<b>- AXIAL ROTATION</b>
<b>2.</b>	<b>RESTORED TO SANITY</b>	<b>POLARITIES &amp; RHYTHMS</b>	<b>POWER ALLADIN &amp; GENIE</b>	<b>- ORBITAL ROTATION</b>
<b>3.</b>	<b>TURN OVER TO G.O.D.</b>	<b>STUCK IN A PERSPECTIVE</b>	<b>FEEL &amp; HEAL SLEEPING BEAUTY</b>	<b>- EXPANSION CONTRACTION</b>
<b>4.</b>	<b>MORAL INVENTORY</b>	<b>RECLAIMING OUR POWER</b>	<b>CHAOS &amp; ORDER THE FROG PRINCE</b>	<b>- TORQUE</b>
<b>5.</b>	<b>ADMITTED TO GOD, SELF, ANOTHER</b>	<b>MERGING WITH THE ILLUSION</b>	<b>WHOLENESS BEAUTY &amp; BEAST</b>	<b>- INSIDE/ OUTING</b>
<b>6.</b>	<b>ENTIRELY READY</b>	<b>PREPARATION FOR RESOLUTION</b>	<b>CENTERING BUILDING MOMENTUM</b>	<b>- PRECESSION</b>
<b>7.</b>	<b>HUMBLY ASKED</b>	<b>RESOLUTION</b>	<b>DISCHARGE MEMORY LANE</b>	<b>+ AXIAL ROTATION</b>
<b>8.</b>	<b>BECAME WILLING</b>	<b>EMPTINESS IN CONNECTEDNESS</b>	<b>READINESS PRODIGAL SON</b>	<b>+ ORBITAL ROTATION</b>
<b>9.</b>	<b>DIRECT AMENDS</b>	<b>LIGHT BEHIND THE FORM</b>	<b>LIFE FORCE LIGHT OF WISDOM</b>	<b>+ EXPANSION CONTRACTION</b>
<b>10.</b>	<b>PERSONAL INVENTORY</b>	<b>ASCENT</b>	<b>WHOLENESS ENLIGHTENMENT</b>	<b>+ TORQUE</b>
<b>11.</b>	<b>PRAYER AND MEDITATION</b>	<b>DESCENT</b>	<b>ONE WITH SOURCE ODYSSEUS</b>	<b>+ INSIDE/ OUTING</b>
<b>12.</b>	<b>PRACTICE THE PRINCIPLES</b>	<b>COMMUNITY ALI BABA</b>	<b>PARTICIPATORY SCIENTISTS</b>	<b>+ PRECESSION</b>

### **Total Learning Environments™ In Prisons**

Based in the Universal Principles discussed here, the TLE™<sup>115</sup> are consciously designed to “perturb”<sup>116</sup> the systems of the addicts who are in treatment in these prison-based programs. The TLE™ are intensive, demanding environments, with gradually increasing expectations as offenders gain more skills and experience during their participation. Evaluations of performance are based on behavioral outcomes, all within the offender’s ability to control. The purpose, methods, structure and outcomes of the TLE™ will be discussed in detail in the next chapter, *Environment Is Stronger Than Will*. Those results are based in more than 20 years of research, by both internal and external evaluators.<sup>117</sup> The results achieved are offered to validate the efficacy of this wholistic approach to treatment based in Fuller’s Synergetics.

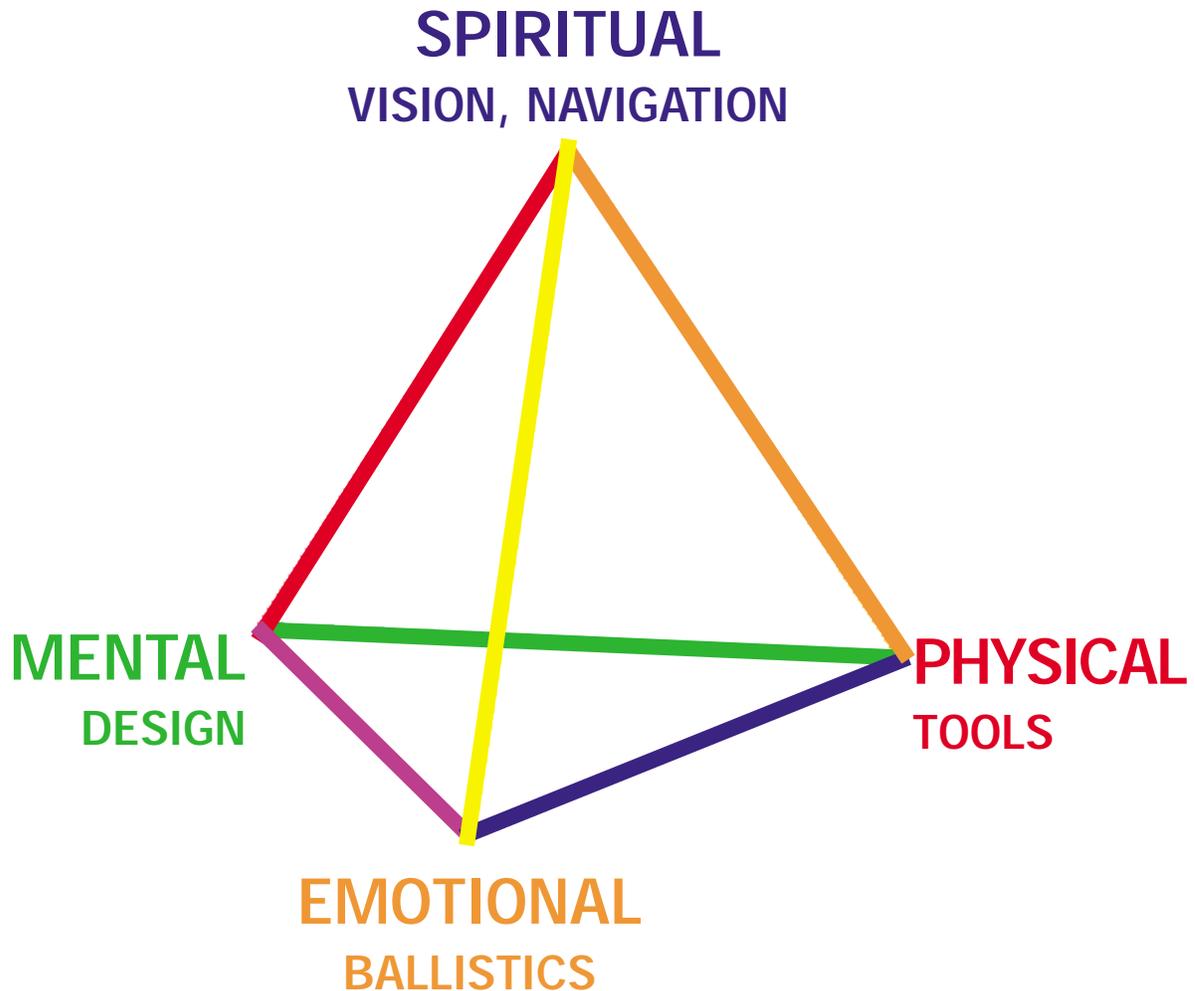
Challenging others to learn to think for themselves was the constant focus of Fuller’s work.

*“From my viewpoint, by far the greatest challenge facing the young people today is that of responding and conforming only to their own most delicately insistent intuitive awarenesses of what the truth seems to them to be as based on their own experiences and not on what others have interpreted to be the truth regarding events of which neither they nor others have experienced-based knowledge.”<sup>118</sup>*

The TLE™ are designed specifically to teach participants how to think for themselves. Using the 5 Steps to Decisions and the principles of the 12 Steps to Recovery as a foundation for operations, the TLE™ provide a learning environment that encourages self-control, personal growth and development. The development of positive life-skills that have been shown to lead to success is the principal goal of the TLE™.

The “*experience based knowledge*” gained in the criminal justice system for more than 27 years, and in human service agencies for more than seven years before that, offers evidence that the statement, “... *if you give man the right environment, he will behave favorably*”<sup>119</sup> has much to offer policy makers in the treatment of offenders. Even among the most hardened criminals, their environment, including the one shaped by the corrections system, influences their behavior, both positively and negatively. In their most recent evolution, the TLE™ focus on young, non-violent offenders serving their first term of incarceration,<sup>120</sup> or are for second felony drug offenders at the Willard Drug Treatment Campus. In Network, any offenders eli-

# TOTAL LEARNING ENVIRONMENTS™



*'Human organisms are systems.*

*They are complex but very important systems of energetically operative integral tools ...*

*How apt a name for the human organism is 'an interior and exterior metabolic system' ...*

*In undertaking our critical-path development of a practically realizable means  
of bringing about all humanity's spontaneously realizable escape*

*from fearfully ignorant self-destruction ...*

*—we are being taught ... to immediately 'undertake the greatest task  
with thorough commitment to every detail.'"<sup>121</sup>*

gible for the correctional facility in which the program was located could participate. Network Programs were available at every level of security, therefore, certain offenders convicted of violent felonies also had the opportunity to participate. Since Shock Incarceration is an early release program and Willard DTC is an alternative to incarceration, it is neither practical nor politically expedient to permit offenders convicted of violent offenses to participate in these programs. Network still operates in some facilities where offenders convicted of violent crimes are incarcerated. Early release is not an option in their cases, so the program has a very different meaning for them.

While some critics insist that it would better serve all to work toward the elimination of prisons altogether, —or at least eliminate prison sentences for those who have committed non-violent crimes—though an admirable goal, is one that has not been entirely realistic, given the continuing escalation of growth in the prison system. The last 25 years has experienced a period of unprecedented expansion in the corrections industry, and seeing no results from the advocates of the “shut them down” philosophy, the questions that motivate the work described here are, “*What happens between now and then? ... What about all of the offenders who are in prisons today? ... What about the one in 40 children who have a parent in prison today?*” (That number was one in 50 in 1994.)<sup>122</sup>

The Total Learning Environments™ in prisons developed and expanded since 1979 are based in both Fuller’s principles and the same principles found in the 12 Steps to Recovery. These TLE™ are designed to provide offenders with opportunities to learn strategies to help them overcome problems related to their addictions, and to learn life-skills that have been found to lead to success. Research indicates that this model, which is dynamic rather than static, and subject to continuous improvement, has documented significant successful results.<sup>123</sup> One precessional effect of the success of this system is the duplication of the model in a number of jurisdictions in both adult and juvenile correctional systems.<sup>124</sup>

The most recent expression of this vision is the development of the workbook series, DOING LIFE! A Life Skills Curriculum for Recovery from Addictions.<sup>125</sup> Written in an accelerated learning format, the workbook series is based in an understanding of the Synergetics of R.

Buckminster Fuller, integrated with brain-based teaching strategies, and the 12 Steps to Recovery of Alcoholics Anonymous and Narcotics Anonymous. The series was designed for use in any setting, by anyone struggling with addiction. DOING LIFE! is one expression of a Vision to create artifacts which can teach people how to overcome obstacles and learn to live fuller, richer lives. Fuller said:

*“THE BEST ANTIDOTE to the powerfully misintentioned sensing and acting reflexes of society is the study of synergetics. The data of synergetics ... are adequate to the task of breaking the Dark Ages stranglehold on the human individual. ...*

*... Study of synergetics with continued recommitment of human individuals to utter faith in the comprehensive wisdom and absolute power of the intellectual integrity and love governing an eternally regenerative Universe may bring about our ultimate escape from the Dark Ages’ race-suicidal obsession with the misconception that cosmic supremacy is vested in little planet Earth’s politicians, priests, generals, and monetary power-wielders.”<sup>126</sup>*

It is perhaps through the study of Synergetics that critics may join with supporters of this work and together, realize a mutual goal to work toward practical strategies to accomplish the ultimate result of elimination of prisons completely, relegating this system to history, as a *Dark Ages* construct. Generations to follow may well only wonder in astonishment, confused as to how any society might have held on to the belief that a system so oppressive could work to “correct” anyone, just as the current generation wonders at earlier, “primitive” attempts to intervene in criminal behavior.

In the meantime, on a personal note, the challenges critics of this work present is both instructive and enlightening, requiring continual clarification of the approach discussed here and the development of better, more effective strategies to express it more convincingly.

The “*torque*” continues to produce valuable learning experiences, always. As First Sergeant (U.S. Army, retired) Dan Flynn says of the particularly tough times:

*“Learning is taking place!”*

## **FOOTNOTES**

### **Thinking Outside of the Box**

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  - Lectures at the Burklyn Business School, (video and audio tapes), 1981-1983, Del Mar, CA
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8. Clark, Cheryl L. - Network Program Plan, op. cit.
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Windes, Kenneth - "*Cops, Cons and Counselors*" Transactional Analysis After Eric Berne, Graham Barnes, Editor, ©1977, Harper's College Press, Harper and Row, NY, and *The Network Program Plan*, 1978

9. Ibid.
10. New York State Department of Correctional Services and New York State Division of Parole, First Annual Report to the Legislature: Shock Incarceration in New York State (1989)  
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18. Ibid., p. 244
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42. Prigogine, Ilya - Order Out of Chaos, ©1984, Bantum Books, NY, Toronto, London
43. Fuller, Critical Path, p. 159, op. cit.
44. Fuller, - "Mistake Mystique", op. cit.

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### **Torque**

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50. Annual Reports to the Legislature, NYSDOCS, op. cit.
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53. Clark, et al, Step 4: Take Inventory, in DOING LIFE!, op. cit., Ron Moscicki explained this to us as a practical example of Torque.
54. Fuller, Critical Path, p. 145
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58. Fuller, with E. J. Applewhite, Synergetics I, 415.10, p. 122, op. cit.,
59. Ibid.
60. Fuller, Operating Manual for Spaceship Earth, op. cit.
61. Alcoholics Anonymous, op. cit.
62. Fuller in a letter responding to a 10-year-old, Michael, wondering what he, "one little individual" could do to contribute to humanity, Critical Path, op. cit., p. xxxviii
63. Fuller, R. Buckminster and Anwar Dil - Humans in Universe, ©1983 Mouton, NY
64. Ibid., pp. 33 - 34

### **Precession**

65. Webster's Dictionary, op. cit.
66. Fuller, with E. J. Applewhite, Synergetics I, p. 83, op. cit.
67. Fuller, Critical Path, op. cit.
68. Fuller, "Mistake Mystique", op. cit.

69. Alcoholics Anonymous, op. cit.
70. Kevin Kallin said he learned this while driving to work, listening to the radio. Fuller describes the radio as a “*class-two evolutionary tool,*” predicting in the 1920’s that radio and other instantaneous, world-wide communications would revolutionize the planet. In *Critical Path*, he says:  
“*In reviewing the full range of human’s presence on Earth we discover two main evolutionary trendings.*  
*Class two evolutionary trendings are all those events that seem to be resultant upon human initiative-taking or political reforms that adjust to the changes wrought by the progressive introduction of environment-altering artifacts. ... tend to flatter human ego and persuade humanity to deceive itself by taking credit for favorable changes ... while blaming other humans or ‘acts of God’ for unfavorable changes.*  
... *Class-one evolution accounts for humans’ presence on Earth. ... born naked, helpless for months, and inexperienced ... verbal ... communication ... led to ... writing or visual communication, ...*  
...  
...*It was class-one evolution that in the mid-1920s disclosed to the world’s children and their parents that the voice coming over the radio had more up-to-the-minute information regarding many more subjects than had the parents. The parents did not tell the children that the radio people had more authoritative information—it was self-evident to the children, who witnessed their parents running next door to the neighbors to tell them what the radio people had just told them. ...” pp. 229 - 230*
71. Fuller, Critical Path, op. cit., pp. 144 - 145
72. Fuller, in a lecture to the Brooklyn Business School, March, 1983. This is also on a greeting card from the Excelsior Learning Institute, illustrated with the bee aiming for the flower.

### **The Tetrahedron: Minimum Structural System In Universe**

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75. Fuller, Critical Path, p. 89
76. Fuller, Cosmography, Fig. 3.3, p. 90
77. Fuller, Critical Path, p. 238, op. cit.
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- 84. Fuller and Dil - Humans in Universe, op. cit.
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**God As Universal Principle**

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- 90. Webster's Dictionary, op. cit.
- 91. Fuller, Critical Path, p. 159, op. cit.
- 92. Ibid., pp. 153-159 includes all of "EVER RETHINKING THE LORD'S PRAYER"
- 93. Fuller, "Mistake Mystique", op. cit.
- 94. Fuller shared these stories in his lectures. It is also discussed in Robert Snyder's BUCKMINSTER FULLER: An Autobiographical Monologue Scenario, ©1980, St. Martin's Press, NY
- 95. Alcoholic's Anonymous, p. 45
- 96. Ibid., pp. xxv - xxx
- 97. Adler, Syntopicon, p. 391
- 98. Ibid., p. 46
- 99. Tillich, Paul, "You Are Accepted", pp. 153 - 163, The Shaking of the Foundations, ©1948, Charles Scribner's Sons, NY
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- 101. Alcoholic's Anonymous, p. 48, op. cit.
- 102. Adler, Syntopicon, p. 401, op. cit.
- 103. Alcoholic's Anonymous, p. 10, op. cit.
- 104. Fuller, Critical Path, p. 152, op. cit.

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