Advanced Thinking
Mathematics, General Semantics…Ways to Improve Relationships

We were born communicating. We do not have to learn to communicate…But if the quality (representational accuracy) of our communication depends on the quality of our thinking, and the quality (degree of satisfaction) of our relationships depends on the quality of our communication, we might enjoy more satisfying relationships through working to improve our thinking and communicating. One way involves **striving to become students of advanced thinking** by infusing our vocabularies with mathematics and general semantics terms, and **using them** to modify our assumptions and beliefs and so improve our usual ways of thinking-feeling, talking about and doing things. Advanced thinking is not about what, or how much anyone knows. **Advanced thinking refers specifically to moments of awareness--the contents of which involve "*consciousness of abstracting*": thinking in a general semantics (non-allness, non-identifying, non-elementalistic, heuristic, multidimensional, propositional, etc.) way about the ways we think about whatever we happen to be thinking about or reacting with—including ourselves.** Many of our problems in communication and other relationships start--depending on where we stop our thinking. In the spirit of "*non-allness, non-identity,* and "*conscious time-binding*" (seeking improvement through applying general semantics), students of advanced thinking remain curious-lifelong-learners: When other thinking 'say' "It is so", students of advanced thinking wonder: "Is it so?—If so--How so?"

Grounded in the principles of "*non-allness* and *non-identity*", the *proposition* "advanced thinking" is based on the following criteria culled from "Webster's Collegiate Dictionary": "being beyond the elementary or introductory; greatly developed beyond initial stage; further on in time or course; being beyond others in progress or ideas; gradual betterment; to bring or move forward; progress in development." A school of thinking claiming to have superseded general semantics would in effect be supporting and illustrating the principle of "*non-allness*"--"We cannot sense, think, imagine, understand, know, say, write, all about anything or anyone--including ourselves:" We could avoid many personal, communication, and other problems by just remembering this seemingly simple *proposition*-principle. As advanced thinking starts where other thinking stops, students of advanced thinking, following a "*non-allness, non-identity, propositional approach",* become engaged in continuous self-educating, self-correcting, self improving way of communicating with themselves, others, and the world around them.

Recognizing that there were no generally accepted everyday communication standard, Alfred Korzybski proposed using his general semantics as a general way towards improving human communication-relationships. General Semantics constitutes a system about systems involving a *generalization of the methods and approach of science and*

mathematics and includes the following interrelated *propositions*-principles-tools: **"A General Theory of Time-binding (tools for improvements and adjustments), a general theory of evaluation and sanity, a general theory of psychotherapy, a general theory of values, a foundation for a theory of ethics, an international common denominator for communication and mutual understanding, among others."** As this system has not yet been generally recognized or accepted, we miss many useful and effective tools for improving communication-and-relationships, and for understanding and resolving many of our disagreements, conflicts, violent outbursts and societal breakdowns.

A mathematical approach helps us improve communication.

The progress of science, technology, and our expanding and improving knowledge of the world (including ourselves) results mainly from applying mathematics in our communicating-relationships with our diverse environments. In his book "Science And Sanity" expounding the "General Theory of Time-binding", on page 728, Alfred Korzybski proposed: "Science and mathematics show the working of the 'human mind' at its best. Accordingly, we can learn from science and mathematics how the 'human mind' should work, *to be at its best.*" We can learn to behave less absurdly, more sanely, more creatively, and more intelligently. Past-present political, economic, national, international structures, and too deeply ingrained language habits lower the *probability* of a saner human race Korzybski thought possible. But as individuals applying general semantics (generalized science and mathematics) we can become more sensitive to the power of language: We can learn to recognize how "'primitive' language habits" affect our thinking-ideas-beliefs-attitudes-and behaviors—and so our communication and other relationships.

Mathematical thinking, as it involves rigorous reasoning, logical consistency, *clear, critical, creative and* creative thinking, constitutes one of humankind's most intense, powerful, efficient and effective self-reflexive self-correcting activities. With precise and explicitly specified standards and terms (a way to avoid ambiguities), mathematics provides us with an example of a common language used not only by all practitioners in the field, but also by the whole human race. Some aspects of mathematical reasoning and applications are represented by terms including *"logical consistency, implication, relation between propositions, order, analysis, relations, form of representation, fractals, invariance under transformation, variables, functions, limits, sets, probability, numbers, symbols, specificity, exactness, rigorous proofs, formally and precisely defined terms, calculus, undefined terms,* and many others. If the quality of our relationships is a *function* of the quality of our inner and outer communication, we can use the methods and approach of mathematics and science as models to help us improve other relationships. In a world of relationships, valuing mathematics as a model and standard of precise relations, we can also value and adopt a mathematical approach as a *frame of reference* and a 'good' (reliable, acceptable, deserving of respect, useful,

commendable) universal communication standard--a model worth copying if we are concerned to improve both our inner and outer communication-relationships.

For instance: In our interacting-communicating with our environments, we judge-measure one thing to be bigger, smaller, heavier than another; one sound to be loud, one thing to be moving faster than another; a room to be hot, a discussion to be interesting or boring, a play to be good or poorly executed; a meal to be fantastic or awful, another to be less intelligent than ourselves, an action taken to be the best or right thing, etc.--often with much disagreeableness, conflicts, bad feelings, and sometimes violence. These differences are unavoidable: We come to situations with different *sets* of values, experiences, memories, interests, concerns etc; we make different judgments, and generally arrive at different conclusions. Using the common language of mathematics and numbers, with their higher level of preciseness than our individual feelings, beliefs, words, and opinions, as our 'measuring' and evaluating standard--we are able to make demonstrable and more easily agreed on comparisons, and so avoid and resolve many of our differences, conflicts, disagreements, etc, which often lead to breakdowns in communication-relationship. With numbers, we can easily determine whether one thing is bigger, heavier, etc, than another. And we could avoid many controversies regarding whether an action taken was the "right" one, or the "best" one--if we have an explicit standard of "rightness" that we agree on, against which to make our comparisons.

General Semantics as generalization of a mathematical approach.

Valuing and practice of "general semantics" was proposed by its founder Alfred Korzybski as a way to increase the sanity of the race. General Semantics, as a generalization of the methods and approach of science and mathematics makes explicit its *propositional* foundations: These include among others, the following principles-propositions: "**non-identity**", "**non-allness",** "**non-elementalism"** (inter-relatedness—not verbally and conceptually separating what in actuality is not separate); "… mathematics, having symbols and propositions, must be considered as a language"; "…mathematics is the only language, at present which in structure, is similar to the structure of the world *and* the nervous system". **We can think of all general semantics principles as "testable *propositions* to be applied" as sensing, thinking-feeling, attitudinal and behavioral modifiers to help us become more intelligent, enhance our sanity, and improve our lives in any area we choose. We can use these principles-propositions-tools to help us reconcile differences and improve all levels of our communication-relationships--intrapersonal, interpersonal, societal, international, and ecological."** As mathematics primarily involves *clear thinking* and *rigorous reasoning*, modifying our language based on general semantics principle-*propositions,* and mathematics terms, we can refine and improve a great deal of our 'primitive' (earlier stages of development), beliefs-thinking-attitudes-and behaviors—a source of many problems in diverse areas of our human interactions.

Communication as a foundation of our relationships.
In this essay I think of communication as **a foundation of our relationships and also as a way of relating.** I start with the following *propositions*: **"Communication** (simply put) **involves transmission, receipt, and interpretation of information transmitted through codes. Exchanging inaccurate and misleading information will inevitably lead to unsatisfying relationships–to say the least. Study-and-practice of general semantics can help us improve the representational accuracy of the information we hold, value, and share with others.** Whatever our goals in communicating, we are involved in using codes. Our interpretation-and-understanding of codes is a *function* of our cultural conditioning--modified by our personal development." I think of codes as "anything that a system interprets, gives meanings to, and responds to in particular ways". Codes include symbols, words, signs, signals, gestures, sounds, songs, dance, music, a touch, a handshake, a hug, a smile, a blush, a smirk, a glance, a look, a wink, a nod, a nudge, movement, inactivity, nerve impulses, bio-chemicals, hormones, diverse frequencies and patterns of electro-magnetic waves, etc. We can improve our communicating by remembering that words we utter, hear, and read; things we see, and hear; experiences we have, etc., as codes, have to be interpreted: We can improve the representational accuracy of our interpretation by applying general semantics principles including "conscious abstracting, non-allness, non-identity, non-elementalism, consciousness of abstracting, and others", and avoid many communication problems. We get hints of communication-relationships problems when there are tensions, conflicts, quarrels, disagreements, disappointments, mistrust, bad feelings, bewilderment, confusion, rebellion, violence, etc. Some factors (v*ariables)* contributing to these problems involve power plays, misinterpretations, mishearing, misreading, misunderstandings, misinformation, poor choice of words, unfulfilled and unannounced expectations, misspeaking, responding at different levels of abstraction (*frames of reference*), ignoring context and issues, context shifts, ethnic, religious and other prejudices, rebelliousness, insensitivity, insecurities, etc.

Having once been thrown out of a group for being too quiet, I realized "We are not necessarily consciously aware that we are communicating or sending codes; that communication involves both verbal and non-verbal aspects; and that we are communicating-and-relating simply by being present—even when we say nothing and think we are doing nothing." We can improve our communication-relationships a general semantics way by constantly keeping in mind the following *propositions* (*variables):* "W**ords, in and of themselves, do not have meanings--We give meanings to what we see, hear, read, experience, etc.** What we find important, interesting, or of great value, might not be so for others. No one knows all. **A word is not the same as what we use it to represent.** When we "put things in context" it's our context. The message we send is not necessarily what is received or understood. It helps when we listen attentively; turn down internal chatter; learn when to shut up; choose words that most accurately represent what we want to say; remember that "no

response" communicates something; remember that responses to "How" usually provides more structural information than the usual (one cause one effect) responses to "Why", and so on. We improve our communication-relationships in being conscious of, and making distinctions between sense experiences, objects, facts, assumptions, descriptions, definitions, opinions, explanations, beliefs, generalizations, theories, etc."

In our inner communicating, interacting with others and with our environments, practicing "*conscious abstracting*" (self-monitoring) and using other general semantics tools help us become more attentive to what's going on (not all) in and around us—a way to improve the representational accuracy of our inner 'conversations' and create better 'maps' as communication guides. In being more attentive, not only do we notice more, we begin to notice **repeated patterns.** In noticing repeated patterns, we notice trends and develop anticipatory and predictive skills; we learn to delay our reactions and consider more mindful responses in conversations (including being quiet) in place of our usual more hasty reflexive ones. As better communicators we diminish shocks to our nervous systems and minimize stress. For instance: When conversations start heating up, instead of getting frustrated and angry, we listen more closely; make up *propositions-theories* regarding where another might be 'coming from', and thinking *non-elementalistically*, "**remember we are part of 'the problem'**". With practice in attentiveness, we learn a great deal about ourselves, about others, and how the world works. We expand our general knowledge, common sense, and 'world smarts' to help us become better communicators.

Communicating among our 'selves', others, and our environments.

Although this is not usually given highly value in most cultures, attending to, and improving the kind of 'talks' going on in our heads, could contribute a great deal to our general wellbeing, improve our flexibility in adjusting to new and trying situations, and help us improve the way we communicate among our 'selves', with others and with the world around us. At nervous system levels constant communication goes on between cells, neurons, neural circuits, immune, hormonal, and other psycho-biological systems: Remembering the "*organism-as-a-whole, mind-body*" principle hinted at centuries ago in the old Latin prescription "mens sana in corpore sano (a sound mind in a sound body); by staying in touch with (being in communication), and taking greater care of our 'bodies', we live healthier by heeding information that something is amiss: codes we experience as aches, pains, fatigue, discomfort, unease, stress, feeling 'out of sorts', etc. With the advent of computers, satellites, cell phones, and other electronic devices, we now send codes to each other around the world at near the speed of light. This exponential increase in frequency, speed and numbers, of transmitted information and misinformation resulting in increasing interactivity, new situations, challenges and problems, requires from us a correspondingly similar urgent increase in our efforts to improve the quality of our inner-outer communication--if we would like to experience

more satisfying relationships. (For more on the notion of "selves" visit <miltondawes.com> and read "A Sense of Selves and a Grammar of Consciousness".) The following includes some mathematical and general semantics terms-ideas-principles-tools (*in italics*) we can use to modify our usual way of thinking, to help us become better at communicating.

Propositions have been described as "**statements that can be believed, doubted, shown to be either true or false by logical deduction (mathematics) or by empirical corroboration (science)".** Thinking of what we see, hear, read, etc. as *propositions*, we develop a "show me the evidence—where is the money-*extensional* attitude"—a way to avoid a great deal of disagreeableness in conversations. Thinking with *propositions*, we are in effect thinking mathematically and scientifically--modes of thinking that trigger our critical evaluation and nudge our curiosity as to their testability, falsity, truthfulness, plausibility, believability, etc. Living in a world of infinite possibilities; not knowing all about anything (principle of *non-allness*); and accepting a principle of *general uncertainty,* **the unexpected can be expected:** As such, we follow a sound-wise path when we bring our non-conscious *propositions* into conscious awareness by adopting and practicing a *non-allness approach***.** Many communication problems arise from **"**allnesses" non-consciously assumed in the ways we think-feel-talk about things. **Thinking** *propositionally* **is one way we can practice non-allness:** We do this by using terms **(at least in our thinking—not so easy in speaking)** such as "to me, let's see, as far as I know, so far, at this time, based on, in my opinion, a/an, as I presently understand this, in terms of, could be, perhaps, probably, possibly, may-be, as if, many, some, sometimes, with respect to, to an extent, usually, to some degree, among other factors, relatively speaking, fr*ame of reference*, point of viewing, and so on, etc.", etc. (If you happen to find it challenging thinking this way, you could make up some possibly revealing "How come? *propositions.*) A word of caution: Thinking, speaking and behaving differently following general semantics propositions require much courage and so could be very challenging: Such ways will generally be criticized, judged, ridiculed, etc., by many, understandingly locked into thinking in familiar and more acceptable ways—ways that the system general semantics was created to help us improve.

The following might be of some help in getting to a feel for *propositions,* and also help us become better communicators by modifying the way we talk with ourselves and others. We could think of sensations as organismic, non-verbal and usually non-conscious *propositions* that 'things' are just as they appear to us; disappointments and frustrations, as reactions resulting from un-rewarded *propositions* that things will turn out as we expected; our judgments as based on *propositions* that something believed is so; our 'shoulds', 'oughts', and criticisms, as based on unstated *propositions* that **our** standards, values, advice, suggestions, etc. are worthwhile following—and that behaving accordingly will bring improvements, desirable and beneficial results;

theories, as *propositions* expressed in the form of explanations; advertisements and promises, as *propositions* to deliver as declared; laws as *propositions* that legally prescribed rules and regulations benefit a society; memories, that past events are accurately re-presented; freewill, that our choices and decisions are influence free; beliefs, that things are what we think-feel-imagine they are; knowledge, that things are as we perceive and understand them to be; the truth, that what is known corresponds to what is so—in every regard; judgments, that one's opinion or evaluation is based on evidence adequate for the occasion; disagreements involve a proposition that one understands what one disagrees with--and "that what one disagrees with exists". (This essay presents a *set* of *propositions—*communication representing some (as I see it) general semantics ways to improve communication.)

Some of the more easily recognizable everyday verbal *propositions* include "if… then, since…therefore" statements. Without the "if--then", "since--therefore" and other pointers, we might find it difficult to convert our experiences, assertions, thoughts, declarations, and seemingly factual statements to *propositions*. Here are some examples: "I know exactly what you mean. I know how you're feeling. I understand what you're saying. The reason is…. The world must have been created--by an intelligent being. The light is green, it's safe to proceed. This can only mean…. It's because…. This means that…. Get government out of the way and…. The market will take care of itself. Doing what you did shows you don't care about me. It was the only thing to do, we had no other choice. Our cars are safe. Too many regulations is bad for business. Taxing the rich will increase/not increase unemployment. This law doesn't go far enough. It won't work. There is no other explanation." There are many others we could add to this *set* by listening more attentively to ourselves and to others, and by converting statements to *propositions* by adding "If—then, Since–therefore", "It has been proposed that…" and other pointers you could make up. A repeated pattern in our communication are statements in the form "a is b": Instead of disagreeing, dismissing, or countering with "a is not b, a is x", we could remember the general semantics principle-proposition "**non-identity**"–"**No two things are the same in all respects***"* and convert such statements to an easily testable proposition: "a is in all respects, exactly the same as b". As this cannot be shown to be true, students of advance thinking continue the conversation not by disagreeing but by asking for more information in terms of "How so?

Conscious abstracting and consciousness of abstracting.
To improve anything we do involves being aware that we are doing, how we are doing, and acting to diminish the gap between our goals (what we want to achieve) and where we presently find ourselves. Conscious abstracting helps us develop consciousness of abstracting which helps us to become better communicators. *Consciousness of abstracting* **could be considered one of mankind's highest** *orders of abstracting,* **a foundation of** *advanced thinking,* **and a sound way to improve our inner and outer communication-relationships.** *Consciousness of abstracting* **refers to instances of**

awareness when we remember: that in our abstracting and abstractions (whatever we do): our sensing, believing, assuming, imagining, thinking-feeling, remembering, talking, explaining, evaluating, believing, generalizing, theorizing, interpreting, knowing, planning, deciding, worrying, expecting, doing, etc., **we have not included all** (principle of non-allness)**.** Being conscious that we are *abstracting* involves "being aware in the moment"--instances of self-monitoring, witnessing, mindfulness, presence of mind, catching oneself. To **practice conscious abstracting**: Wherever you happen 'to be being'--with *consciousness of abstracting* as a modifier: Look around. Silently tell yourself what you are seeing, hearing, thinking-feeling, doing, etc., in these moments. *Conscious abstracting* can be challenging: Our sensing, thinking-feeling, judging, assuming, talking, etc. are usually automatic occurrences. But with practice, *conscious abstracting* can also become automatic. Practicing *conscious abstracting* and *consciousness of abstracting* provides us with a *time-binding* way to attend to and improve our communicating--while communicating. In times when we are conscious of abstracting, we are **modifying--***indexing, operating* on our way of being in the world. Consciousness of abstracting involves among other factors "remembering that our words (and other symbols) are not the same as what we used them to represent (principle of *non-identity*); and that no matter how objective we might think we are in our evaluations, opinions, etc, we have not excluded ourselves (it's our opinion, our evaluation) and in that sense, we are being more subjective than objective".

A calculus approach and conscious abstracting.

Practicing a *calculus* approach, we get glimpses of ourselves in our ongoing communication-interactions; and similar to *conscious abstracting* give ourselves opportunities to improve our communicating while communicating. To get a feel for the calculus, the following is a description which I find quite useful: "*The study of a continuous function by following its development through indefinitely small steps.*" Let's say the *function* we are following involves the following interrelated and interactive *variables*: our attitude, body language, our thinking-feeling, choice of words, pitch, volume, tone of voice, attentiveness, interpreting, responses, and so on—*as a function of time*. We can then present the idea of the *calculus* in this form: "Very close monitoring, catching ourselves (*conscious abstracting*) sensing, imagining, thinking-feeling, speaking, doing, *etc.* in our communicating-interacting among our 'selves', with others, and with our surroundings". Close sensitivity to what, and how we are doing, allows us to make timely adjustments. Proposing-assuming that "Self-improvement is a *function of* self-correcting, and that self correcting is a *function of* self-awareness"; by close monitoring of our conversations, we can quickly change, modify, or stop our approach when things seem not to be going well. The more aware we are, the more *increments* of information we have for making more accurate '*maps*' of ourselves, others and situations in which we find ourselves in. Through *conscious abstracting* and a *calculus* approach, we can make more of our unconscious *propositions* conscious; and with *consciousness of abstracting,* make timely general semantics-*time-binding*

adjustments and improvements in the way we find ourselves communicating-and-relating. Applying these three modifiers can help us a great deal to become better communicators, and better at whatever we are doing. As all fields involve interacting-relating-communicating, you might think of "**a *calculus-propositional*-non-elementalistic-general semantics approach" as a foundation of advanced thinking; and a general, ideal self-training heuristic, psychological tool--applicable towards conscious time-binding improvements not only in communicating, but also in any field of human endeavor or activity.**

Words as semantic variables.

The word "variable" is another mathematics term we can add to our thinking vocabulary. In mathematics *variable* is defined as **a symbol which can represent any value selected from a given range**. Generalizing, we can think of *variable* as a label for "aspects of a situation, and anything we can change to make a difference". We can think of words as symbols, values, *variables*—codes representing our thoughts-feelings, intentions, experiences, opinions, concerns, interests, beliefs, *etc*. As words are not their meanings or the meanings we give; as different users give words different meanings; as words are generally used to represent and stand for objects, situations, processes, and so on—We can think of words, labels, names, symbols, signs, codes, sensations, etc. as "*semantic variables*". Modifying our thinking with the notion of "*variables*", we learn to appreciate and anticipate different *values* each of us gives to situations--differences reflected in our diverse interests, opinions, beliefs, values, points of viewing, theories, explanations, forms of expression, and other factors emerging in our communication with each other. As a *function* of time and change, we can **think of anything (including ourselves) as a *variable*.** As a *function* of the infinite range of possible meanings that human beings can give to the *set-variable* we label **"**Universe**"**, in our conversations we can expect and prepare ourselves to deal with *infinite* (indefinitely extended) numbers of implicit and explicit *propositions*--some verifiable and others not at all verifiable.

Words, 'Things' as variables, in and of themselves do not have meanings: "Our differences in opinions, values, and many problems in relationships often arise from differences in meanings we give to words and other semantic *variables*)." Having lived in different places and seen different things, we come to situations with different values, experiences, memories, interests, concerns, beliefs, language and other skills, levels of personal development, and so on. **We cannot avoid giving our own meanings and values** (usually non-consciously) to what we see, hear, read, experience, remember, believe, understand, say, and so on. "As much as we might assume and act as if we do, we do not know what others mean. In our everyday conversations, to be rigorous, we are generally responding to **our** meanings—*values* we give—how we interpret things—So in our criticisms, agreements and disagreements, we are in effect agreeing and disagreeing with ourselves (our interpretations and understanding). Many

communication problems arise when we forget this. (See "Taking Responsibility for The Meanings We Give" at <miltondawes.com>.)

Functions.

"F*unctions*" have been characterized as **precise statements of relationships among variables***. Functions* are about interdependence and interrelatedness: They are not about "cause and effect". Generalizing, and applying *functions*: We could translate *function* to "depends on", "related to", "varies as", and think of our behaviors, feelings, values and beliefs, etc. as *functions* (among other *variables*) of the ways we think-feel, and vice versa--(bfvb…=f(tf) and tf=f(bfvb). We are *functions* of each other. In terms of *"observed-observer interactions":* What we (as individuals) see, hear, talk about, etc, is not just what is there, but a *function* of our human and personal manner of seeing. (Other organisms and other humans do not see exactly as 'we' see.) We could think of the "quality" (closeness of match to external realities) of our beliefs, judgments, opinions, plans, decisions, etc. as a *function* of the quality (representational accuracy) of the information on which they are based. **Thinking in terms of** *functions* **we could experience more satisfying relationships** (personal, societal, international) and improve our communications by thinking of the meanings we give, and our different ways of interpreting and understanding, as *functions* of the different *sets* of cultural values, memories, skills, experiences, personal beliefs, expectations, etc. we bring to situations. In seeking to understand our intra-personal and interpersonal problems, we might gain much if we explore and attend to the seemingly more time-consuming "possible underlying contributing factors" ('*independent variables'*). When we follow a "*principle of least action*" and deal with the more visible "symptoms and consequences" (*derivatives* and *dependent variables*), we tend to ignore "underlying contributing factors" which continue to generate more and more problems. A challenge we face: From an evolutionary *frame of reference,* stopping to ponder possible "underlying contributing factors" when there is a rustling in the bush could have meant life or death--so quick re-action (attack or flee) might have had higher survival value in earlier times. It seems our tendency to quick reaction rather than reflection and contemplation prevails–much to our disadvantage since we are likely to lose valuable information as a *time-binding* base on which to build better communication-relationships.

Words as names for different sets.

A *set* is defined as **"any collection whatsoever…with specific rules as to what qualifies as member of a particular** *set."* Living in different places-and-times, with different interests, sensitivities, experiences, beliefs, values, concerns, skills, and so on, we make different associations and connections, bundle events in our uniquely different ways, and **usually non-consciously, create our own psychological** *sets* **with members based on** *rules we make up* **for who or what will belong to our** *sets.* Our stereotyping and prejudices can be seen as examples of *set* creating. "**To be, is to be in relationships":** To improve the quality of our communication, it's worth our while to

remember the following: In the physical world outside our heads, *sets* do not exist. In terms of "*multidimensional structure*", any *set* we create can be considered a *subset* of many larger sets—Whatever *sets (subsets)* we put others in, they also belong to the *set*" human beings"…and will behave as humans despite our *set* rules for how they should behave. Members of *sets* we create are also members of *sets* others create: As such, individual *set* members might not necessarily behave according to one *set of* rules— sometimes, and some, might value and behave according to **our** *set*-rules, at other times they might behave according to rules set by other *set* makers or *sets* they have put themselves in. We usually label our *sets* with the **same word-names** commonly used by others to name their *sets*--So in using the 'same' words, **we are not talking precisely about the same 'things' or** *sets* **of 'things'.** For instance: The *sets* "success", "progress ", "beautiful", "friend", "love" "liberal", "evil", etc., will have different meanings and different qualifications for memberships for each of us. Visiting the 'same' (*set* name) place, and having stayed at the 'same' (*set* name) hotel, with our different experiences, different activities, meeting different individuals, etc., the term "vacation" constitutes a *set* name with different members, and different meanings.

We have a common vocabulary—But to be rigorous, since words as *variables* are given different meanings (*values*) by different users, and are names for different psychological *sets,* **we do not have a common language**. We understand each other to *some degree* since to *some extent* our meaning-*sets* overlap. We communicate-relate-treat others, situations, things, etc., according to the psychological-*sets* we place them in: friend, boss, important, valuable, pleasing, attractive, desirable, threatening, safe, immigrant, dangerous, Christian, Moslem, rebels, protesters, leader, doctor, *and so on*. Problems usually arise when we include or exclude some members of other's name-*sets* from our-name *sets*. For instance: I might include "persons with rights", as member of my name-*set* "fetus", and could be offended by "abortion"--an act, which from my rules qualifies as a member of my name-*set* "murder". But you might exclude "fetus" from your *set* rules as being a member of your *set* "persons". Some might want all nations to belong to the *set* "democratic"--In terms of "*non-allness*", diversity, and individuality, we can predict and expect that there will be some individuals, groups, 'nations', leaders, etc. whom will resent being put in such a political *set*. Opposing views are often easier to resolve if we realize that in the world outside our heads, the number of characteristics comprising anything is larger than (*asymmetric relation*) our individual *sets* involving what we think-feel, imagine, believe, value, say or do about anything: There **will be other ways** of seeing things. Remembering that the 'same' words refer to different semantic-*sets* leads us to: acknowledge different referents and connections; appreciate other points of viewing; and broader understandings. Broadening our understanding of our own and other's points of viewing can help us improve our conversations and our relationships.

You could think of *sets* when in discussions, debates, and conversations you hear the following: "Let's put this in context…" "Let's put this in perspective…" "As a matter of fact…" "It's the right thing to do…". "The truth of the matter is…" "The important thing is…", "What this means…", "This can only mean…", "We…", "They…", "Everybody…", and so on. We could relate these statements to a speaker's mind-*set* involving his/her *set* of associations, values, beliefs, *frames of reference*, point of viewing, her or his perspective based on her or his rules as to who or what qualifies as a member of their *sets* "facts, right thing to do, truth, important matters, what means what, we, they, everybody,", and so on. As individuals, our mind-*sets* and related behaviors play such an important part in our lives--even after new experiences, more up-to-date, more accurate information, we sometimes find much difficulty changing our ways. At a bigger scale (*fractals*), many agencies, organizations, institutions, etc., continue to operate following policies, rules and regulations, based on earlier less informed *set* ways of thinking. When changing situations 'call' for adjustments--and old ways of thinking prevail—resistance to change (*inertia*) could be detrimental for any individual, group, organization, institution or society. (An example: Fighting conventional wars against unconventional fighters (war 1945 is not war 2011(*indexing*).) With higher levels of "flexibility in dealing with new and trying situations" (related to "intelligence" in some dictionaries), we might avoid obeying "A law of the conservation of ignorance"--a *proposition* attributed to the great mathematician "Georg Cantor". (Notwithstanding, there are some who talk as if "changing one's mind" (for whatever reasons), is a terrible thing to do, and deserves condemnation.

There are ways to engage our imagination and convert uncomfortable communication moments into more agreeable experiences. For instance: Someone says "This is beautiful", or "This is funny", and you think "How ugly", "Not funny at all": Instead of promptly disagreeing, you could c**reate *propositions*** regarding rules that might qualify this object or statement as a member of the *set* "beautiful things" or "joke" for this person (*indexing*). If "beauty" and "funny" have not been precisely defined, you could **expand your frame of reference;** keep in mind that others have their own perspectives; include their point of viewing and create your own *sets*: "What makes things beautiful", "What makes statements or situations funny "for some"" (*indexing*)". We can also use *indexing* and translate these statements to: "She, he, thinks this is funny. She, he, finds this beautiful", *and so on.* This doesn't mean agreeing or disagreeing with another's abstractions: The exercise *proposes* a general semantics way to **broaden our outlook.**

In international affairs, we sometimes hear references to "the Americans, the Pakistanis, the Iranians, the Israelis, the Palestinians", the North Koreans, the Moslems, and so on. Relationships might improve if we regarded these labels as referring to administrations governments, regimes, etc. at a date: names for "*fractions* of a whole" (*subsets*), and not identified and reacted to as if they referred to the *set* of all members of a particular culture, nation, or society. When we indiscriminately put everyone in the same *set,* we

miss opportunities for improving relationships with those whom might be sympathetic to, or might support our causes, goals, and interests. Remembering "*non-identity, indexing, asymmetric relationship, non-allness,* and *dating*", we might be more inclined to establish contact and open communication channels by being more *extensional* (give more importance to members of a *set*) instead of behaving *intensionally* and giving more value to our labels: No two Iranians are the same. Moslem (1) is not Moslem (2).

Order, asymmetric relations, preciseness.

In the number system we find easily recognizable examples of *order*, *asymmetric relations,* differences and similarities, *preciseness,* and more. In our political and our everyday interactions, we sometimes use and hear statements such as: "We did the right thing. This is the best thing to do. We did the only thing". In terms of "*order*" and "*asymmetric relation*": If by "best" we mean "better than all others", and by "the right thing" we mean "others will not be right"—claiming "right thing", "best thing", or "only thing" makes sense only **after** (*order*, *asymmetric relationship)* best and right have been specified, other things were done, and all consequences evaluated. And if 'other things' were not done, we could avoid arguing about such statements and consider them more as members of the *set* "propaganda" than of the *set "proposition"*.

Communication within and across generations.

As time-binders: Let's acknowledge the contributions of teachers, historians, artists, novelists, scientists, mystics, philosophers, 'thinkers', entertainers, religionists, reporters and others in their communicating within and across generations--reminding us directly and indirectly from their different *forms of representation* how we are being human. We are constantly receiving information from our environments; we have the ability to learn a great deal from anything—depending on how observationally attentive we are, the learning tools we have, and how diligently we use them. From a premise that inner/outer communication-relationships mirror each other (*fractals*), **students of advanced thinking work at becoming little pockets of sanity** by adopting a general semantics, heuristic, let's see, mathematical*, propositional* approach, to monitor, eval uate, modify their experiences and beliefs, and the ways they think and communicate with themselves, with others, and with the world around them.

In the spirit of "non-allness", I invite you to correct misinterpretations, add other mathematical and general semantics principle-propositions applicable to communication, and send me a note. A reminder**: General Semantics involves** a **set of tools we can use** to improve our communication-and-human relationships. We derive little benefit from just talking and writing about it. **It has to be** pra**cticed—constantly:** Older ways of thinking, being automatic, and constantly bombarding us--internally and externally--is our "default mode of thinking" and need no practice. (For more on general semantics contact "The Institute of General Semantics" and visit <miltondawes.com>

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Milton Dawes/2011