

Structuring The Notion “Space-Time”

A General Semantics Conscious Times-binding Approach

The exploration of the notion “time” from a general semantics structural perspective presents propositions that can be easily corroborated or refuted by anyone who cares to do the relevant observations. I have offered some structuring of the term “structure” and others general semantics conscious times-binding evaluating tools.

‘The Past’ Has Not All Passed

The terms “past”, “present”, and “future” can be thought of as convenient, but grossly inaccurate ‘measurements’: semiotic maps; **labels** representing imprecise, but nevertheless potent verbal mapping of events. Our human journey--one continuous trek—has no observable boundaries, no seams, where-when we would all agree that “Past stops here. Present begins here.” “Future—not yet here.” Specific events have passed, but if we do not **elementalistically separate events from their effects**, we will recognize that the **so-called “past” has not all passed**: What we now call “the present” are mainly the effects of innumerable ‘passed’ (earlier) events. These effects are active in the repositories of our unconscious, in memories, parents, cultural practices, language, beliefs, sciences, philosophies, religions, values, artistic creations, music, songs, poetry, legal and educational institutions, schools, laws, policies, photographs, gifts, stories, buildings, 'the box' (our habitual-usual, familiar, convenient, traditional ways, methods and approach): “Supply and demand” economic 'theories' persist despite the actualities of hoarding, cartels, and price fixing. Nations are still fighting wars the old and traditional ways—while for terrorists it's 'war' by any means. You can experience how powerfully influential and persistently active is the so called 'past' when next you set out to make some changes: a habit, a home or office routine, etc.

‘The Future’ Started Long Ago

Our usual way of relating to the words ‘the future’ involves believing and acting as if the “future” (not the word) is not yet here. Watch a toddler beaming with delight taking her-his first few steps and ask yourself “How did our human world get to be the way it's being?” Our **“futures” started long ago. (“Futures” since There are many futures.)** What we now think of as “the present” are 'futures' that have grown out of the effects of earlier happenings...what we have been calling ‘the past’. From moment to moment, we are **constructing--and have been constructing futures**—our own and the futures of others. A future we are now experiencing as ‘the present’, is a function of (related to) **what and how we have been going about things**: The ways we think-feel about things, ourselves, and others; the things we believe, the policies and institutions we have, and are creating: The things we are doing and have been doing, are ways we start and started our own futures, contribute to the futures of others, and to lesser or greater degrees, the futures of our societies, the country we inhabit, and the futures of the human world. Looked at these ways, it's no paradox to say we can extensively change aspects of the so-called 'past' (not all passed), and also set or change directions for the already started ‘futures’ by attending to

how we as individuals and as a race, are 'presently' going about things...a 'humangous' challenge.

The word is Not the Thing

We could benefit greatly by thinking of the word “future” not as a noun, naming a ‘thing’ or period, but more accurately acknowledge that **we are creating futures**, and emphasize this with a verb--“**futuring**”. We create problems for ourselves when we think *intensionally* (give more meanings, importance, and values to words such as “past, present, future, justice, freedom, democracy, free, freedom, rebels, the best, the right thing, time”--and words in general). I invite the reader (for structural practice) to imagine some structures behind those words. We gain more through being *extensional*—*finding actual situations that can be pointed to as referents for our words*. For instance: A reporter in the area at particular times might notice that there are many types of rebels. In general semantics “extensional evaluation” is succinctly expressed: “**Words are not the structures we use them to represent.**” We could be less persuaded if we thought the words of advertisements and politicians (not all) referred mainly to structures (ideas, intentions, imaginings, etc.) in the minds of advertisers and politicians. So called “free markets” are well organized, managed and controlled. **'Things' are not the labels, names, and categories, we assign them.** You can experience this first hand the next time you remember a name but have difficulties remembering the person, or vice versa. Our words, as **symbolic representations** (semantic variables), are based on our memories, ideas, assumptions, imaginings, and beliefs, etc., *about things*. There are intervals (separations) between our words and whatever we use them to represent—the two are **not identical** (not the same). So ‘things’ cannot be those words or ideas or memories. If we think of *words as triggers*, (cancer, liberal, socialism, terrorists, promise, friend--to mention a few) it's up to us to be mindful of the structures (context, ideas, images, beliefs, expectations, anxieties, feelings, etc.) they set off in us. We can minimize our ‘**intensional**’ tendencies through **visualization**. Visualizing (purposeful imagining) helps us recognize ‘structures’ words (like “time”) are about--or that **we imagine** our words represent. The word “time” and many other words as “words” give no clues regarding what they are about.

Expanding Our Horizons--A Structural Approach

From a hill or the top of a tall building our **visual horizons** are as far as we can see: But our imagination, curiosity, wondering, philosophizing, scientific and artistic explorations will **keep expanding our horizons** much farther than we can see with our eyes.

In “Science and Sanity”, page 269, Korzybski proposed the following: “As words are *not* the things we are talking about, the only possible link between the objective world and the verbal world is structural.” **Thinking in terms of structures** is a way to expand our horizons to range from the indefinitely small to the infinitely large, and helps us adapt, adjust and become better managers in a rapidly changing world. **With a structural orientation we notice more, make more connections**, become more informed, and start to notice **structural similarities** (‘fractals’) how some ‘thing’, situation, device, operation, activity, problem, etc. is like another or others). Noticing structural similarities we make connections across our diverse experiences--how to apply what we learn from one situation

to others. And the more connections we make the more we extend and accelerate our 'understanding' of seemingly dissimilar and unrelated situations: We might notice for instance that armies in their protective roles are somewhat like our immune systems. We might notice that removing a brutal dictator is like removing a gang leader or drug lord—and that power struggles for leadership usually follow. And from the perspective of *structurally similarity* we might begin to wonder if there are possible similarities between our nervous system-mind-brain operations and the social, economic, belief systems, governmental, business, science and other structures (systems) these mind-brain structures create: If so, we could learn about some mind-brain operations from studying the operations of these structures (systems), and learn from the operations of human creations something about how human mind-brain-nervous systems work.

To be (exist) is to be in relationships

Look around and listen closely: Notice that **we are connected** and 'things' are connected in some way or another--on top of, attached to, issuing, hanging from others, and so on. **To be (to exist) is to be in relationships.** "Structure" is about how things are made up, their , **relationships and interactions.** As far as we know, *everything has a structure* or can be structured. "Order" and "ordering" (as "adverb and verb") can be thought of as *ways we relate 'things'*. Terms such as "past, present, future, before, sooner, later, early, earlier, late, above, below, next to, behind, beside, in front of", and so on, are ways we order activities in intervals of space and durations (times). The way we understand things, our opinions, explanations, theories, judgments, criticisms, beliefs, etc. are based on connections we have made from our experience of structures ('things', objects, situations, etc.) Scientist, engineers, and mathematicians (as examples) have achieved great successes with their formal involvement with studying and exploring structures related to their particular field. In our everyday living we do not generally think in terms of the structural aspects of things and situations. Lacking a structural appreciation and approach we miss opportunities for achieving the kind of successes experienced in the fields of engineering, mathematics, and other sciences. **General Semantics** as a "**generalizations of the methods and approaches of science mathematics**", provides us with principles, life-skills tools we can apply in our everyday thinking-behavior-and interactions--a way to copy the structural approach of scientists, engineers, and mathematicians.

"Structuring", "abstracting", "conscious abstracting" and "consciousness of abstracting" are ways to improve our ways of being-and-relating from a **structural perspective.** These operations are based on the **general semantics principles "non-allness":** *being aware that in our abstracting we have not included everything*"; and "**non-identity**": *being aware that no two things are the same in all respects.*). Structuring (a behavior) involves "**self-consciously exploring the components of a situation, object, or event...including ways they are related and interact with other situations and events.**" **Abstracting** (selecting-leaving out) is a general semantics generic term for anything we 'do': sensing, imagining, thinking, talking, etc. We can think of **conscious abstracting, and consciousness of abstracting** as critical-creative tools we can apply towards making improvements in any area. A structure of these activities includes "paying close attention, being mindful, being aware of what and how we are 'doing' (while 'doing'),

our reasons for doing, and what we hope to achieve...And most importantly: Remembering (without being anxious) that *whatever we are 'doing' or think we are doing, we are doing much more than that.*"

Structures structure structures.

We tend to think of 'things' rather than the structures of, or ways of structuring 'things'. That we can use one word to create a sentence about itself could be a clue to the semantics power of the word "structure". We are structures living in a world of **multidimensional structures** (complex structures): structures-within bigger structures-incorporating smaller structures, interrelated and interactive. An example of multidimensional structure: ...society, human organism, organs, tissues, molecules, atoms, sub-atomic particles. (A society is part of bigger structures; and sub-atomic particles might be structures comprising smaller structures.) **A structure we often forget in our abstracting-structuring is ourselves--our contributions, how we are involved, and the parts we play in situations we find ourselves.** In general semantics we are reminded of this through the principle "**consciousness of abstracting**"...*a way of remembering ourselves as "abstractors"--- whatever other labels we might apply.* For instance: When we are disappointed we could consider this as "a lack of correspondence between our abstractions (what we expected or hoped for--structures we imagined), and the structures we experience (what actually happened)."

As a *function of* (dependent) on our differing individual goals, interests, concerns, skills, training, etc. (our diverse structural selections), we 'see' 'things' from different **perspectives**, different points of viewing. From a structural frame of reference and being **conscious of abstracting** we recognize that our different conclusions, solutions, beliefs, opinions, feelings and assumptions regarding what's going on, or might be going on in a given situation, is only one of many possible points of viewing, and involves different connections we make and different structures we attend to: We realize that the way we think and talk about, understand, explain a situation, etc.) is **only one of all the possible ways** we could talk about, relate with, analyze, or understand an individual, a system, an organization, a situation, or an event: Recognizing this, we avoid many disagreements, misunderstandings and conflicts. **Different fields of activities arise from 'times' spent in the exploration (usually non-consciously in terms of structures) of different structures:** Engineers deal with structures involving machinery, material, forces, etc.: physicians deal with the chemical, physiological and other structures constituting the human body. Artists and athletes recognize that success depends on a deep understanding of the structures they deal with. **Structural thinking** helps us recognize that the way we 'understand' anything, the meanings we give, our beliefs, values, opinions, and goals are based on the structures (experiences) we are familiar with (to date), or that we imagine exist or will exist, and the 'times' (the extent of the intervals of durations) we spend exploring particular structures. We **become more structurally savvy** and improve our relationships by paying more attention to the make up of things and their relationships.

Structural Thinking Enhances Life Skills

The words we use to define and categorize often lead us to ignore structural complexities. **Structural ignorance** contributes to ongoing increase of our human problems. When we treat problems, issues, and situations as if they had no connections (were not part of other structures), we construct the foundations for our futures of many more challenging “problems creating problems”. A great deal of the ineffectiveness of many personal, societal, and international solutions to problems of relationships, can be attributed to the factor that the **structures (problems, issues) we deal with are not the same (not identical) and do not operate following our ideas, labels, definitions, and categories**—they exist in different intervals of ‘space’ and durations. In the field of general semantics, ignoring structural relationships is labeled “**elementalistic thinking**”—in everyday language we sometimes say “an isolated case, an aberration”, “has nothing to do with”, and so on.

Particular structures operate ‘best’ (more efficiently, more effectively) in particular ways: Cars do not operate well in lakes; a hammer works better than a screwdriver in nailing things. As highly complex psycho-biological structures, we are naturally better at some things than others: A highly skilled worker does not necessarily make a competent manager. Our organisms at conscious and non-conscious levels survive by recognizing, learning about, adapting and adjusting to, creating, and destroying structures. **Our words, knowledge, opinions, understanding, explanations, expectations, metaphors, analogies, etc. are about structures**--actual or imagined. We are in the domain of structures when we make plans and decisions, resolve problems, ask questions, talk about things, make up theories, tell stories, play games, and so on. **Oppositions, conflicts, and disagreements** can generally be attributed to **disagreements about structures: Each party non-consciously assumes** that their selections, interests, etc., are the **only structures** involved, or that their disagreements are about the same structures. I have dwelt on the notion “structure” from a perspective that: As structures in a world constituted of structures: **It makes good sense and it suits us to practice a structural approach.** And we benefit in recognizing how our “allness”, “identifying”, “elementalistic” thinking, and other **uncritical habitual ways inhibit and diminish our structural appreciation and conscious times-binding** (ability to improve) potentials.

With a **structural non-allness orientation** we broaden our understanding by exploring as many possible relationships as we can. When ‘things’ do not match our expectations, from a **general principle of uncertainty** we make up as many theories as we can as to what might have occurred. In a related and interactive world we do better dealing with our problems in terms of “**causes and effects**” rather than our usual **less effective** “*one cause one effect approach.*” We think in terms of **actions, reactions, and consequences. Thinking structurally** we go beyond asking “What is “x”? to “inquires about situations (actual, or recognized as imagined structures) we can relate to the term “x”. Thinking structurally we go beyond (transcend) being satisfied only with answers to “Why?” and **times-bind** (build on this) and ask “How?” Although answers to “How?” complement answers to “Why?”, “**How?**” responses usually offer more structural information than responses to “**Why?**” (“We will create more jobs.” “How?”) Think “structure” when next you are having difficulties folding a road map--Watch how the folds bend. **Thinking structurally** can be considered a way towards improving anything we choose: a **general improvement times-binding method.**

With a structural approach guided by a curiosity as to how things work, we learn and **learn how to learn**, how to teach and coach ourselves and so learn how to do better whatever we set out to do—and this includes **ourselves**. Being aware that there are always other structures, other relations, other connections we could make, we improve the way we interact with ourselves, and with others--a way to resolve many disagreements and conflicts. Structurally oriented and remembering that **“‘Things’ are not what we say, imagine, or think they are,** we move from such questions as “What **is** truth, freedom, justice, “time”, the meaning or purpose of life”? or “What **is** any “x”?” to “What are we talking about? What are some possible non-verbal structures associated with the words we use in asking these questions.?” With a structural approach to everyday living based on the **“non-allness”**, **“non-identity”** and other principles, we recognize that a deliberate structural approach is not the only possible approach to living, and broadening our understanding. There are **‘things’ we can learn and improve from anyone (including ourselves) and from anything.**

If we think of **“creativity”** as involving **“imaging, exploring, and realization of possible structures; philosophy** as involving speculative explorations of diverse and possible structures; **intelligence** as a measure of structural (how things are related) comprehension; wisdom as intelligent application of intelligence; **science** as the study of the interactions of diverse levels of energy-physical-and material structures; **general semantics** as conscious, deliberate structural evaluation of structures: A structural orientation and a **conscious structural approach** can accelerate and broaden **our understanding--a way to expand our horizons towards possibly better futures.**

A Structuring of the Notions ‘Time’-and-‘Space’

Einstein and Minkowski times-binding the earlier notions of ‘space’ and ‘time’, introduced **“space-time”** to the scientific world. We can do some times-binding (*start from, build on, and seek to improve*) on their times-binding and propose a structuring of **the word “time” as “a label” for a sense-experience integrating “conscious-awareness-memory-order-durations-intervals-space-events-movements-changes-existences.”** (Visit miltondawes.com for more on “times-binding” and other general semantics principles and evaluating-behavioral tools.)

The notion of **“Time” is our creation** (*Whom else?*). "What time is it?"...This question has potentially billions of responses. For a start “what time it is” depends on where one happens to be being. For astronauts on the Moon or on Mars, or ‘beings’ of a planetary system millions of light years away “What time is it?” might not be a meaningful question. 'Beings' of far away regions might not track changes as we do on earth. On earth, sunrise for some is sunset for others: What 'time' it is depends on where on earth one finds oneself; what month of the year, what society or culture, what standards are used, how accurate is one's ‘clock’, and so on. It could be 11 A.M. by New York's clocks, 4 P.M. in London, and 10 A.M. in Chicago (depending on which city is on "daylight saving"); and it could be some 'times' next day some places in Australia. For some tribes in the middle of a jungle, 11 A.M. would probably have no meaning whatsoever: Dates, weeks, hours, milliseconds are human labels, indicators, convenient **markers of durations** with particular significance to many--but not

necessarily all humans...Some may mark durations in terms of “many moons” or “ ‘till the cows come home’”. On a lighter note: “What time is it really?”...Could be dinner-time, vacation-time, time to go, time-out, not the right time, and so on...And as my very wise high school geography teacher would respond in his usual way to any question we asked “Your guess is as good as mine”.

Regarding ‘space-times’: Noticing that things are not piled up one on top of another, we become **aware of separations (intervals)** between different objects. We also notice that events (happenings, activities, occurrences) do not happen all at once—there are intervals-separations between happenings. We **sense and experience** the result of our psycho-biological **ordering** and ‘**measuring**’ as “**durations of intervals**”. Eventually, we **formalize our awareness of intervals between positions with the term “space”**. And we **formalize our experience of durations of intervals with the term “time”**. **To experience “duration”:** Notice how you feel when next you are anxiously, impatiently waiting for someone or something. With no humans around to **experience, order, and ‘measure’** durations, there could still be intervals-separations--but no ‘time’. For an individual in an unconscious state (with no awareness of, or ability to 'measure' durations, there would be no times.

When we talk about “measuring time”—What tools do we use? Does a ‘clock’ measure time? If so: Where is this time? Thinking structurally “Time does not exist as a measurable 'object'. **We don't and can't 'measure' ‘time’**”: We ‘measure intervals of durations. To believe-say that we measure “time” would be to say in effect, that “measurable time” was already there; that “time” **existed before** humans, and will continue to exist with or without human experience and evaluations. If we ask “What time is it now”?, “now” refers to an instant which has passed, and so the time subsequently given is strictly speaking not an accurate response. From our experiences of intervals, and “durations of intervals” we could more accurately modify our thinking from being about “time” to being about “**times**” (*intervals of durations of happenings in ‘space’*). Similar to “futuring”, we might be better off translating (grammatically restructure) “time” (noun) to “timing” or “time” (verb)--representing an action: **We ‘timed’ (‘measured’ the duration of)** the race. We ‘timed’ one revolution of the earth around the sun and created-labeled the duration “one year”, and so on.” We can practice timing through *practicing conscious abstracting*--attending to “when we say or do, do not say or do not do something.” In terms of *action-reactions*, ‘good timing’ could make a big difference to future outcomes In general semantics the importance of “times” is acknowledged through the principle of “**dating**”: We recognize that our judgments, beliefs, opinions, explanations, knowledge, etc. are based on information limited to a date. Next clock-time you are asked “How are you?” Say “I am OK—as far as I know”. Note the reaction.

‘Space’ as Multidimensional (Complex) Structures

Objects are not geometrical points (indicating positions only)—In effect there are **many possible intervals** we can select between structures-objects, and happenings. Intervals between two objects) will be seen differently when viewed from different positions. (Stars that seem to be ‘quite near’ to each other could be million of light years from each other—

an 'illusion' (a misinterpretation) labeled "parallax"). We usually and for convenience, **elementalistically** ignore relationships, forget structures including intervals, durations, movement, etc. related to the word "space". Objects can be thought of as "multi-dimensional structures"—structures of structures of structures to 'strings' if these exist. The computer I am using has a structure comprising electronic circuits, a screen, keys, switches, etc. These smaller objects can be structured in term of molecules, atoms, etc. As we have not so far encountered "empty space"—and assuming that **'things'**-energy systems and micro structures **are everywhere**--We could think not of things-objects existing in space, but **"things as infinitely diverse configurations of 'space'"** with some volumes of 'space' occupying other volumes--like a baby in the womb. We could also think of 'space' as the totality of 'position intervals'--if there is such a totality. As such, space as Universe does not expand...What would it be expanding into? (Holes, are "wholes"--not empty space despite appearances--they are full with air and other aspects of 'space'. Even 'black holes' (not really holes) according to astrophysicists, are not completely devoid of matter-energy). Vacuums are not empty space, but space (a volume) of cosmic and other particles-bits of space. We could think of **consciousness as an unusual** (like no other) **configuration of space**.

Ordering-'Measuring'-Intervals-Memory

Visit a lake on a windy day: Notice the relentless interplay of waves and wavelets. We see no intervals. If we wanted to 'measure' an interval of 'space' or duration, we would *create one by setting up markers*. In a world of constant movements and inter-activities, "dates, hours, minutes, yesterday, today, tomorrow, next week", etc., can be thought of as **"space-times-markers"**--intervals we designate-create, as our way of **ordering** 'things' and happenings to *help us keep track* of events and their durations.

"Order" a component of structure, as used in these abstractions is a term for "the ways 'things' are arranged or we arrange 'things', and how we relate and compare 'things' in terms of intervals of space-and-times. "Order", in terms of "timing" involves *where* and *what comes before what*. We make sense of things through order. Order is an abstraction for that *unifying entity* which sustains (keep reasonably intact) the structural integrity of an organism, a group, a society, or a nation. There is some order (routines, habits) involved in staying alive, caring for children, preparing for work, meeting friends, being entertained, etc. Our acceptance of chronological-times helps us maintain a certain degree of order in our interactions with each other: Schools, organizations, meetings, conferences, shops, busses, trains, planes, etc., operate following (more or less closely), designated and expected chronological-times.

A key to our structuring of "time" is the **asymmetric notion "order"**. (Numbers and grammatical syntax provide excellent examples of asymmetric relationships. But one can just look around to notice that no two things are exactly the same.) Asymmetric relationships emphasize the importance of order: The relation "A" is beside "B", can be considered a "symmetric relationship": We can change the order and say "B" is beside "A". And if "A" is the brother of "B" we can also say "B" is the brother of "A". Changing the order does not change the relationship. Regarding "asymmetric relationships": If "A" is

before, or bigger than “B”, then “B” is behind and smaller than “A”: Changing the order makes a difference. Our organisms are especially sensitive to asymmetric relationships. For our survival, within limits and without training or instrumental help we experience-compare-order an “A” as bigger or smaller, faster or slower, lighter or heavier than, more or less threatening, before or later than a “B”, and so on. We live in a **world of asymmetric relationships**: *No two things are the same in all respects* (general semantics **principle of non-identity**). When we treat ‘things’ as if they were the same, we oppose the rest of Universe and set ourselves up for ‘hard times.’

'Mind' processes working optimally at neurological (non-conscious) and psychological (conscious) levels operate based on “ordering”, 'measuring', comparing, and in recognizing asymmetric relationships, organize their internal processes towards appropriate or related responses: To avoid pain and injury we usually remove our fingers before we close a door or lid; a toddler lifts its feet alternately to climb a stair. We can weaken our “allness”, “identifying” and “sameness” attitudes by adopting a **heuristic** (*Let's try and see* approach)-and also when we shift from categorical “identifying-allness” thinking “This is ‘that’” to “This to me, is in some ways like that—for the times being”. Through our indiscriminate use of words and poor structural thinking, we ignore asymmetric relationships, and harm ourselves thinking absurdly symmetric (sameness) in an asymmetric world. Politicians (not all) create social, economic and other problems when they introduce policies and pass laws based on symmetric relationships (equality, sameness, 'allness', based on labels, definitions, categories, etc.)...In terms of structure we might remember that we elected them. A equals B makes sense in mathematics—but in a space-times world we have found no equality, no sameness--so far. It is sometimes easier for us to get into a situation than to get out of it.

Structuring 'Measuring'

Our notions of “times” involve ‘**measuring**’ **intervals of durations**. The processes we are labeling ‘measuring’ include but go beyond the usual instrumental comparisons (scales, tape-measures, ‘clocks’, etc.). Our living involves constant ordering and ‘measuring’. In ‘measuring’, we are (consciously or non-consciously) *making comparisons* with an accepted standard, our expectations, or remembered experiences--whether we are ‘measuring’ a performance, an activity, an object, or an interval. When overtaking another vehicle on a busy highway, we are estimating-measuring’ tracking changing intervals of positions and durations: Poor ordering or ‘measurements’ are sometimes fatal. At night times, headlights of moving vehicles are not easily seen as changing positions. This contributes to difficulty in estimating speed and diminishing intervals of space-times (how fast, how far away, and how long before potential contact with an oncoming vehicle). We are 'measuring' when we test ourselves and others, define, criticize, make a judgment, get impatient, and so on: In ‘measuring’ we are comparing-matching a behavior, object, or situation against our own *usually non-conscious* personal ‘standards’ (our values, beliefs, experience, memories, ‘knowledge’, expectations, etc.). Over times, we treat others based on our 'measurements' and the *symbolic 'markers'* (names, labels, definitions, categories, etc.) we create and use, to reinforce our opinions and beliefs about ourselves, others, and situations.

From two points on a geometric line or curve, there is one interval: But tangible objects (structures) and events (happenings) are not geometrical “points” with precise positions: So between two objects or two events there are **innumerable potential starting and end points** for our ‘measurements’. The ‘measuring’ starting points (when-where they start their stories, analysis, explanations, historical overviews, etc.) of different individuals, *groups*, etc. will be different due to their different experiences, values, beliefs, training, education, interests, etc. In terms of “order”: Without recognizing and agreeing on starting and end points, the results of ‘measuring’ (evaluations, explanations, opinions, conclusions, etc.) and related decisions could be different for each ‘measurer’...Ignoring these factors and others has contributed to a great deal of our misunderstandings, disagreements, conflicts and violence.

'Measuring' Intervals Depends on Differences

The general semantics **non-identity principle** (a formalization of difference and asymmetric relations) states that **“No two things are identical (the same in all respects). “Non-identity” is fundamental to our dealings with intervals. No two intervals of durations are the same.** Look at your ‘clock’ for a two minute interval. Think of all that’s going on in the city during those two minutes. Later on do a similar exercise. Would you say the goings on in these two intervals of durations (times) were the same?

‘Space’ (as far as we know) has no boundaries, seams, or divisions. There are no 'natural' mile posts on the highways, no absolute divisions indicating the start of an event and its cessation, no 'natural' boundaries between nations. There have to be “separations, intervals, differences, betweenness” for two things to be seen as two. If there are no separations ‘they’ are identical and will be seen as one. Since there are innumerable intervals between two structures, objects, happenings, etc., the **intervals we ‘measure’ are our human and individual selections** (abstractions, divisions, fractionalizations) **we designate**. We can visualize a structure for the phrase “space-time”: When we 'measure' intervals between two objects or activities “A” and “B”, we *start from a position we select*, then *'move' to the other we also select*: In *'moving'* from starting point to end point our 'measuring' invariably involves intervals of both positions and durations. ‘Measuring’ tools involve our own personal and groups' ‘measure’ of durations (psychological-timing), and a formalization of these cultural timings with the aid of mechanical and electronic instruments, we label “chronological-time”. It’s important for reliable results that we take into account that whatever we are ‘measuring’ could change as a consequence of our ‘measuring’. (This important factor is addressed in scientific measurements--not usually so in our everyday ‘measuring’ ...judgment, opinions, criticisms, etc.) Remember “parallax”: With outstretched hands, close your eyes alternately while looking at a finger. Notice the change in position related to a distant object. Observed from different frames of reference (including positional and duration intervals, values, beliefs, experience, etc.), specified spatial locations could be observed as different by different and even the same observer, resulting in different ‘measurements’.

To minimize conflicts, it’s important that we remember that just as **we designate and order** starting points and end points of our 'measurements', **we also create and follow standards-**

-our own, society's, professional, etc. Different individuals, groups, etc., will usually arrive at different results from following different standards (frames of reference). We give the results of our 'measuring' of intervals of duration and separation, labels-markers such as "many moons, so many feet, high, low, far, close, durations, late, early, seconds, minutes, days, etc." To minimize ambiguities, uncertainties, and missed-understandings, we organize our affairs by following the more reliable chronological-clock 'times' as our standard. Without being sure even of our own 'measure' of durations, we would find it extremely difficult interacting-communicating and organizing our relationships with one another based on our individual variable 'measure' of durations, and our interpretation of terms we use to express our 'measuring'. When I say "few", "many", "soon", "later", and so on, I might not be sure (even to myself) to what my "soon" refers: It could be later (today), or tomorrow, next week, or next month. "Few" for me might be "many" for you. We avoid a great deal of disagreements and conflicts by remembering that words used by different individuals do not refer to the same intervals, durations, or referents as those of others...In general, our communications involves common terms. We use the 'same' words, but our words do not have the same referents. In effect we speak about **our 'things', different things as if they were identical...the same for everyone.** Thinking in terms of structures is one way we can minimize our natural tendency to "identify", or prejudicially treat individuals (including ourselves), things and situations as if they were the same...no difference at all.

'Times'. Psychological, Chronological, Philosophical and others.

We can think of our **ordering** and 'measuring' of intervals we create, from chronological, psycho-logical, philosophical and other frames of reference: **Psychological-times** involve our **personal sense of the duration of intervals** between events or occurrences. As proposed earlier on we assume that for our survival, there are internal biological 'measuring'-ordering-organizing systems (bio-clocks). For instance: When we are impatiently waiting for someone, some important information, or feeling bored, our 'measure' of duration (how long) is different from instances when we are having a 'good time'. When we are having a 'good time', enjoying ourselves, listening to a 'good' speaker, etc., we ask "Where did the time go?" Our organism's 'measure'-experience of durations compared to "chronological- times" differ, depending on our changing moods, our age, and even our body temperatures. We can modify our impatience through *doing something else besides waiting*... reading a book for instance; or make up 'theories' as to what might have caused the delay. Waiting, feeling impatient or bored, increase the number of instances of awareness and so the number of intervals: "Are we there yet? When will this end?"--asked over and over. When we are reading (not waiting), or having a 'good time', the number of intervals of durations we are aware of decreases...So an hour (clock-time) might feel like ten minutes (psychological-time). (This is somewhat like having a tape measure with inch intervals expanded to say two inches...We get shorter results if we are unaware of the change). Without being able to specify or compare our different 'measuring' starting points, we create and generally accept the more reliable **chronological-times, as a standard to** help us to better organize our dealings with each other. Chronological-times, involving "numbers" provides a degree of exactness, and specific asymmetric relationships applicable to our social interactions (when, where do we start and end), and help us minimize disorder. "The meeting will start at 10 A. M. on the 5th. day of the 10th. Month of the year 2014, in

Manhattan, New York” gives more reliable and specific information than “The meeting will be held sometimes soon, somewhere in New York.”

Philosophical 'times' involves a shift from our direct experience of durations to notions, beliefs, ideas, philosophies, structuring, etc., related to our question “What is ‘time’?” In some dictionaries there are over fifty entries related to the word “time”. In the abstractions presented here, we reformulate the question to “What are some structures we can relate with our notions of “time”? We propose that the word and idea “time” can be expanded to include **“a structure involving interrelationships between “awareness-ordering-memory-measuring-differences-movement, etc.”** We propose that: **“We created the notion of “time” as a way to mark, keep track of changes and events, and 'measure' durations.** It is proposed that: **Intervals of durations** which we experience, 'measure' and formalize as “time” is not an activity: Stand at an intersection and watch cars go by--they slow down, speed up, and stop: The interval-distance and duration of intervals between cars are constantly changing—But these intervals (gaps of durations), do not fly, flow, slow down, speed up, or stand still or end. We speak of “saving time, managing time, measuring time, wasting time, losing time, and so on”: To be more accurate, we might say “We manage, for better or worse, more or less satisfactorily, effectively, or efficiently, our engagements and our projects, our attitudes, feelings, and behaviors, *during certain intervals-periods* of our existence.” From these abstractions, the notion **“beginning or end of time”** is an example of our imaginings and philosophizing about the notion of time. We might avoid a great deal of confusion by treating such “notions of time” as *metaphors* rather than as *descriptions* about an objective “time”--an entity which exists with or without humans. And we might be better off **thinking in terms of “times”** rather than “time”. **Some might say “All this is just “semantics, nit-picking”**. A general semantics response to this could be: “Nit-picking can lead us to make more refined and accurate verbal maps (abstractions); can help us avoid or minimize confusions; can help us arrive at better understandings of ourselves and the powerful effects of language. Nit-picking can help us recognize the self-inflicted harm resulting from our indiscriminate use words—when we forget that the words we use are not the structures, operations, situations, ‘things’, etc, we use words to represent.

Conscious abstracting and Difference

Experience for yourself a distinction between **“conscious-abstracting”** and “non-reflective, automatic, spontaneous, reflex actions” labeled in general semantics as **“signal reactions”**: Visualize stepping on a dog’s tail. Or “The phone rings: A habit kicks in—a cigarette is automatically picked up: One could be smoking for quite a while before becoming aware of this response.” We could think of the phrase “conscious-abstracting” not as a “noun” but as both verb and adverb (*how* we are being conscious) and a *times-binding process* going beyond “non-reflective behaviors” to being aware, to being aware of not including all. Awareness of difference involves separations-intervals, and enables a sense of duration...that one instant or instance of consciousness is not the same as another. (“Self-consciousness” could be thought of as related to coalescence (an overlapping) of two instances of consciousness. **Applying a calculus approach:** We can think of “meditation”

as involving a limit of 'self-consciousness'—when the extent of the interval-duration between two instances of conscious activities approaches zero.)

Difference (non-identity)

We live in a world of differences: *No two things are the same in all respects* (general semantics principle of **“non-identity”**). Disagreeing with this principle is one way to illustrate its validity). **Consciousness (as verb)** is an activity (something we do that involves an 'object') that depends on a radical “difference” between consciousness and the 'things'-objects we are conscious of. Without consciousness we would not be aware of differences, and without differences we would not even be aware of being conscious. There have to be intervals-separations between consciousness and the 'things', or changes one is conscious of...including consciousness. (If we think of “self-consciousness” as involving “consciousness of being conscious”, the two instances of consciousness are not identical--one is the 'object' of, and earlier than the other.) Neurological-and-psychological sensitivity to difference-separation between 'events' results in awareness of intervals of durations. For better relationships at diverse levels (personal, interpersonal, societal, international, ecological, etc.), it suits us to remember that as we have lived in-through different space-times (intervals of positions and durations), our psychological processes will proceed from different experiences, knowledge, interests, values, skills, opinions, fears, 'joys', sensibilities, sense of duration, and spatial intervals. Also, with different experiences (in terms of times-places of involvements, recognition of different structures, etc.) our 'psychological ages' are different from our chronological age: We could consider ourselves as being 'younger', 'older', smarter, wiser, more skilled, etc, in diverse areas of our developments. (One could be an excellent director but a poor parent...A highly skilled worker but a poor manager. A skilled interviewer once remarked: “There is a big difference between ten years experience and ten times one year of experience.)

Existences: Familiarity tends to breed “indifference”: As existences surrounded by existences, it's easy for us to forget “existences”. Whatever exists, exists somewhere and for some 'measurable' interval-duration. We can think of the labels **“reality”** and **“space”** as terms referring to the **“totality of existences , operations, and 'measurable' intervals ”**. **Events (occurrences)** involve 'things' changing, things in action, things moving, things in relationships, etc. Consequently for more accurate 'measurements' it's important that we include the factors of movement and change--including change in the 'measurer' and her-his 'measuring' tools.

Change (not necessarily noticed) involves **differences (non-identity)** in locations, forms, activities, etc. Our awareness of durations involves change and movement. We experience durations through awareness of change (different stages of processes). **Movement involves positional change** (not necessarily noticed). As far as we know “everything moves”: For instance: While sitting quite still wherever we are, we are 'moving' quite fast--breaking all our earthly speed limits. How so? With the earth spinning on its axis, its orbit around the sun, and the movement of the galaxy we are in--We are moving (changing cosmic positions) at over thirty four thousand miles each hour. Things changing, or changing positions, involve movement. (Growth, expansion, shrinkage, etc., qualify as movements.) Things

moving from one position to another implies intervals of 'space' and intervals of 'measurable' durations. Our ordering and instrumental **'measuring'** of an interval between *our designated mark-start* of a movement, and an *end we determine*, gives us chronological time. Movement-'time'-'space'-awareness, etc., go together. From these abstractions "time" does not move. (Where would it move to, or from?)

On Times-binding and Conscious times-binding

A modification of a few lines from an old song is offered as an overview of conscious times-binding: "**Anything I can do I can do better. I can do anything better than me.**" Alfred Korzybski created the term "**time-binding**" as **an operational definition of human beings**. (In these abstractions, I have translated "time" to "times".) **We are natural times-binders**. We have a natural ability to use our observations, curiosity, experiences, critical thinking skills, creativity, and competitiveness, to **build and improve on our own** ideas, opinions, explanations, theories, attitudes, behaviors, etc., **and those of others**. Individually, we do this to lesser and greater degrees. Over times-intervals (could be a few minutes or thousands of years), we learn how to do many things 'better'. We put logs across a stream and create a bridge; from our observations, 'measurements', accumulated knowledge, and imagination, we create 'theories': With experience, we improve our bridge building skills and learn to build 'better' bridges, and create better theories, present more informed opinions, and so on. We have a natural ability to **create 'better'** (more informed, more inclusive, and more accurately representative symbolic, verbal, and maps). We are natural times-binders but we are **not naturally conscious times-binders**. We can **improve our natural times-binding** processes through conscious abstracting and conscious time-binding--being attentive to *what* and *how* we are doing, and through occasionally asking ourselves "What am I doing now?": "**What can I learn from 'this': How can I make some improvements?**"

We can structure-think of **consciousness as involving, and evolving different times-binding levels** with each 'higher' level being *more inclusive* and also *improvements* on 'lower' levels. From a grammatical perspective: Consciousness level (1) has as its 'object' whatever we are conscious of, reacting to/with, or involved with; and could be described as "involuntary, spontaneous, reactive". Consciousness level (2) has as its 'object', consciousness level (1) structures. We are more 'mindful': We reflect on our spontaneous, involuntary level (1) attitudes, beliefs, reactions, etc. We **create 'better'**--more informed, more inclusive, and more accurately representative symbolic, verbal, and maps--enabling us to learn and improve on some level (1) attitudes-behaviors and minimize their often deleterious effects. Consciousness level (3), (**consciousness of abstracting**) involves awareness that what we learned (our abstractions) at levels (1), (2), and (3) does not cover all. We can think of this (**non-allness**) level (3) consciousness as so far "*the highest, most inclusive level of consciousness*" allowing us to extend and improve our natural times-binding creative abilities. ("Highest" based on the factor that we cannot presently go beyond being aware that our sensing, thinking, feeling, planning, beliefs, explanations, knowledge, understanding, etc., do not cover all about anything.) Level (1) consciousness being involuntary and spontaneous needs no effort or training...and sometimes needs level (2) re-training and 'restraining'. (I sometimes automatically use the 'remote' to lock the car doors. But I often have to return to check whether I had done this or not. Now I am training

myself to be consciously aware of this level (1) automatic behavior.) Levels (2) and (3) requires much effort. Our societies and ourselves are mainly structured-organized and operate based on levels (1) and (2) consciousnesses with their self-protecting mechanisms (structures-organizations) that tend to retard level (3) advancement in many areas. Science has started to operate at level (3) but not yet self-consciously: In quantum physics the observer's role in 'measuring' has become important...but “intensional”, “non-allness” and “non-identity” principles although tacitly appreciated through a theoretical-heuristic approach, have not yet been formally considered or recognized as potentially important scientific paradigms.

An Ever Widening Gap

The internet, mobile devices, fast speed trains and planes, very large cruise ships, etc., enable more of us to interact more frequently in less times-places-intervals (sometimes at near the speed of light) than we did a generation ago. Increased interactions and communication present us with exponentially increasing numbers of problems-challenges. **The times-space-intervals between problem emergence and problem resolution has diminished** to a degree possibly beyond the problem resolving skills of a race (but not individuals) of diverse ‘measurers’ with different standards, starting points, and using different 'measuring' tools. Our high-tech weapons of war came about through natural times-binding but without the constraining conscious time-binding values based on “non-identity”, “non-allness” and other general semantics principles. Our general everyday attitudes, many of our human creations and ways of dealing with problems are based on levels (1), and (2) consciousnesses--not on level (3) **“conscious times-binding” values, and ethics**. These values and ethics involve **cooperating** to appreciate and **promote consciousness of abstracting** as an important heuristic **for the advancement of human relationships and human survival**.

“Training ourselves in conscious times-binding (being attentive and remembering we don't know or understand all), we would devote more times-intervals towards achieving higher levels of observation, analysis, and structuring to help us keep pace with our advancing and expanding technologies. A **“don't know it all attitude”** keeps one constantly curious and 'times-bindingly' motivated to learn more. **There is an urgency**: The longer the times-space-intervals between problems and their resolutions...the more problems-challenges our problems create. Through natural times-binding (level (2) consciousness, ‘we’ continue to behave like ‘primitive’ tribes but with highly computerized 'smart' ‘slings’ (guns, missiles, drones, etc., with explosive stones (warheads,). **We have no level (3) conscious times-binding “Ministry of Peace”, “Ministry of Critical Thinking”, “Ministry of Advanced Thinking”, or “Ministry for The Promotion of Better Human Relationships and Better Futures”**. Such ideas at this moment might evoke terms like “fanciful, visionary”, and so on—But just looking at the moon through a telescope was some times ago frowned upon—imagine then, someone in those times-space-intervals suggesting that humans would one day be jumping around and driving around on the moon! We can resolve to be dissatisfied with verbal definitions and levels (1) and (2) categorical thinking. We can practice a structural-operational-heuristic “Let's try and see”, “What's gong on” approach”--as a worthwhile start towards achieving more satisfying futures.

A Tiny Structuring of General Semantics

Alfred Korzybski, out of a deep concern for the **ever widening interval (times gap) between our advancing technologies and our relatively poor human relationships**, created the conscious times-binding system he labeled “general semantics”. We could think of **general semantics as “generalized science and mathematics”**: a meta-critical evaluation system with explicitly presented principles; a conscious times-binding meta-psychological system generalizing the approach and methods of science and mathematics as evaluating and behavioral models and standards for our everyday living;” a system of psychological tools we can use to help us think clearly about complex and controversial issues. (And it's about much more.) Korzybski’s conscious times-binding resulted in general semantics principles as psychological tools we can individually use to improve our appreciation and understanding of structures and a structural “what’s going on” or “might be going on” approach...including what is said, written, discussed about what's going. Using general semantics level (3) principles to modify our thinking, opinions, beliefs, judgments, behaviors, etc., helps us adapt, adjust, and better manage ourselves in a rapidly changing world of new challenges emerging from our extensive and continuously advancing technologies. A general semantics orientation is a way to see how behaving as members of tribes we limit our awareness of ourselves as *individuals in wider relationships*. We become 'better' (more conscious) times-binders by recognizing ourselves as unfinished and worthwhile improving.

Studying-applying-and modifying our thinking-and behaviors based on general semantics principles help us (as individuals) to improve our abilities to deal with new and trying situations and live more intelligently, wiser and with less dis-stresses...a way to build the foundations for possible better futures and possibly a ‘better’ human world. Things, situations, happenings, objects, structures, are not their names or labels: Yet incredibly, our human societies operating mainly “**intensionally**” at levels (1), and (2)--treat words with greater respects than the structures they are supposed to represent (Is it “ethnic cleansing” or “genocide”?). With this orientation we can expect our individual, 'tribal' divisiveness, and racial problems to increase exponentially both in size and complexity. Applying general semantics principles as evaluation and personal development 'measuring' tools, and applying conscious times-binding values and ethics as our ‘measuring’ standards, are highly recommended ways we can work towards general improvement in all areas of our living. We sometimes hear “The past is gone”, or “Forget the past”....Time to move on”. With a conscious times-binding orientation, we structure 'the past' as “intervals-periods-times incorporating ideas, policies, laws, behaviors, beliefs, prejudices, discoveries, developments, etc, with effects that continue to influence our present attitudes, behaviors, laws, policies, regulations, and so on. We have much to learn from the effects of earlier levels (1) and (2) ideas, policies, beliefs, opinions, and behaviors, as guides to develop more informed ideas, 'better' policies, saner level (3) attitudes and behaviors. Learning from the 'present' effects of the so called 'past': We can make “**Taking care of oneself and contributing to the well-being of others; working towards conscious times-binding excellence; and valuing conscious times-binding level (3) ethics, a worthwhile present-future goal for ourselves--and possibly the race.**” (See Bernard Lonergan's “Insight”, “A Study of Human Understanding”, page 219) and Korzybski's “Science And Sanity”.

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References: 1. Korzybski, Alfred, *Science and Sanity* (1933), Forth Worth, TX, Institute of General Semantics (1994) 2. Korzbski, Alfred, *Manhood of Humanity*, The International Non-Aristotelian Library Publishing Company, Institute of General Semantics, Distributors, Lakeville, Connecticut . 3. And many other time-binders--too numerous to mention.