

Deriving the Multidiscipline axioms from *Metaphor and Thought's Evidence*

Axioms about metaphors influencing many disciplines” [H]

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Abstract:

Twenty eight dominant axioms and 54 sub-dominant axioms (82 total) are evidence of the case that *architecture is an art* resolved that *architecture was the making of metaphors because it (architecture) made metaphors*, personified by metaphor *stasis*’ two *technical and conceptual* dimensions. Both are valid separately and even more usual in combination. But how do these two work, and, how does this knowledge benefit design, use and evaluation of built works? The axioms were derived by examining Andrew Ortony’s *Metaphor and Thought* evidence and works by Paul Weiss, William J. Gordon and the Yale lecture series on the same subject. Prior monographs were steeped in deductive reasoning since there was no new information (evidence) pertaining to metaphors. Therefore the previous articles included analyzing and explaining the syllogism:

- *Art [G] is the making of metaphors*
- *Architecture is an art [G]*
- *Therefore architecture is the making of metaphors.*

Without evidence we could do little to reason why art [G] is the making of metaphors nor why architecture is an art. Since 1967 I proceeded to analyze the

presumptions and find its many applications. This new information by Andrew Ortony first published in 1979, provides evidence to support inductive reasoning and to this end each axiom is its own warrant to the inferences of the above syllogism and the answer to question of why metaphor is the stasis to any of the syllogism's claims and implications.

Biographical note: (88 words)

Columbia University coursework in behavioral psychology under Ralph Hefferline and others in voice Linguistics, Bachelor's of Fine Arts from Pratt Institute and Master of Architecture from Yale University where I was mentored in metaphors and metaphysics by Dr. Paul Weiss. For research I founded the New York City not-for-profit corporation called Laboratories for Metaphoric Environments.

In addition to authoring over fifteen published monographs by learned journals I have spent 20 years in Saudi Arabia and have written a book containing pen and ink drawings on perceptions of 72 European cities.

Institutional affiliation:

Global University ;American Institute of Architects; Florida Licensed Architect; Programming Chairperson for the Gulf Coast Writers Association; National Council of Architectural Registration Boards; Al-Umran association of Saudi Arabia, American Society of Interior Designers; and founding president of Architects International Group of the mid-east.

Practical Applications:

Since this monograph's primary audience is scholars related to the making of built metaphors I first present the architectural axioms followed by the *reference evidence of science from which the axioms are derived. This I do with roman numerals for the axioms and later numbered footnotes for the evidence of science and sources. One can apply anyone of these axioms and sub-axioms to a design project and, hopefully, watch as it changes the paradigm of outcomes.

The evidence is based on the authorities of the following disciplines:

*Philosophy, Linguistics, Psychology, and English.

*Urban Studies and Planning, Linguistics, Cognitive Science, Experimental Psychology,

*Psychology and Opinion Research. * Special Education, Social Policy, Learning

*Sciences, and Education and Applied Behavioral and Cognitive Sciences.

Observations:

"Architecture as the making of metaphors" is itself a metaphor bridging "architecture" and "metaphor". Since we are making metaphoric use of both *linguistic* and *conceptual* metaphors it behooves us to provide evidence, inferences and warrants supporting this claim; as a resolution this metaphor contains claims that buildings are to architecture as written and spoken vehicles (books, poems, novels, essays and letters) are to linguistics and may be conceived of as conceptual metaphors.

The evidence of language may be varied, macro or micro. We warrant that as mathematics the source can be translated from numbers and formulae so may the observations, assumptions, conditions, operations, ideal and goals be translated into targets and then designs.

As the words of a “play” may spoken to be “played” so a design is expressed when it is constructed. When the constructed work is occupied it is tantamount to the audience appreciating the play. In sheltering, the building comforts while in being read literature also comforts but the building actually can be inhabited and house inhabitants unique to shelters; so this is the difference which is neither analogous and the difference which makes the work of architecture unique and not a analogous to literature. Not to leave the comparison off balance a novel may be carried and put on a shelf while a building cannot. Building is occupied in fact while the reader is occupied in mind.

Architecture, the word is itself a metaphor bridging “master” and “builder”: from arkhi- "chief" + tekton "builder, carpenter". Master was a title of citizen ship, authority and high status while builder was all of the skills associated with carpentry where merchant places of business with residences were constructed by carpenters under a master carpenter. The very acts of the architect as the arbiter between owner and contractor and the metaphor of the contract documents bridging ideas to reality are metaphoric.

As words, grammar, phonetics, literature, dictionaries, and encyclopedias are the vocabulary and tools of writing and speaking so are mechanical, electrical, plumbing and structural engineering, materials, structural elements, building systems, manufacturers catalogs, history of interiors, history of architecture (beams, cables, columns, flooring, roofing, wall materials, lights, wires, ducts, etc.) the vocabulary of designers.

The writer and the designer both devise the choice of words, construct sentences and paragraphs to express, explain some ideas, create some mystery, and romance while the designer contrives his vocabulary of elements to reify the program.

The completed building speaks through its every part. Its volume, spaces, shape, form, and height with proportions, shades and shadows, reflections, inner and outer spaces, sequence of spaces, planes and internal and external volumes.

The building is the ensemble of the actors of the play reciting their parts, the musicians in the orchestra playing their pieces all led by a conductor who interprets the composer's composition as the general contractor interprets the contract documents. Today we have computers which can translate words into three dimensional building models and translate the model to drawing and specifications. This application of this analogy was not even conceivable when we began this study in 1967. Forty years from now the possibilities seem endless but leading to expanded metaphors and use of metaphoric thinking. However, between then and now I have been asked by software giants to discuss architectural terms so they could build tools for architects to design. Computer Aided Design, Master Spec, Modeling is the results of such conversations.

Most cognitive linguistic research [E] on metaphor (such as architecture as the making of metaphors) may be characterized as theory building, in which concepts and hypotheses are developed about the nature of conceptual metaphor. To be sure, such theories have empirical underpinnings, in that their authors are careful to collect many linguistic and architectural examples that corroborate our theoretical constructs. To put this slightly differently, these are theories meant to be put to the test in empirical research. [E] In that respect, they are not like the hermeneutic theories of philosophers.

[F] What makes our present comparison about metaphor unique is the important distinction that has been drawn between conceptual metaphors or metaphorical concepts on one hand (as “architecture as the making of metaphors”), and linguistic metaphors on the other hand (Lakoff and Johnson 1980; our lecture series was in 1967).

The former (concepts) refers to “love is war” and “love is Journey” while the latter is actually “linguistically” in nature as Weiss’ “Richard the Lion hearted”. Metaphorical language, consisting of specific linguistic expressions, is but a surface manifestation of realization of conceptual metaphor. Conceptual metaphors are systematic mappings across conceptual domains: one domain of experience, the target domain (architecture). In short, the locus of metaphor is not a language at all, but in the way we conceptualize one mental domain in terms of another (Lakoff 1994:43) is precisely what we do when we bridge architecture the making of metaphors with building and literature8.0.

The contemporary Theory of Metaphor: a perspective from Chinese by Ning Yu [F] says that it can be that architecture is the making of Conceptual Metaphors (not literal) - This occurs where the metaphor or extension of meaning from one object to the other is not in the words (building) themselves but is the mental image. The words (or in the case of architecture the shapes, forms, materials, etc) are prompts for us to perform mapping from one conventional image to another at the conceptual level. Nevertheless, according to Webster *linguistics* is the scientific study of natural language from where metaphors emanate and is also both art and science and we can say that what can be true for linguistics may also be true for non-language (conceptual) expressions including art; if art then all of its subsidiaries and what may be true of any one of them may also be true for them all.

In fact there have been many important art movements such as the Beaux Artes and the Bauhaus that also believed there is correspondence of these forms with one another. We can do this because language is any set or system of such symbols as used in a more or less uniform fashion by a number of people, who are thus enabled to communicate intelligibly with one another.

Linguistics is the study of any system of formalized symbols, signs, sounds, gestures, or the like used or conceived as a means of communicating thought, emotion, etc.: the language of mathematics; sign language. We extend this to include non-spoken language (concepts) and that art is conceived as a means of communicating thought such as mathematics, sign language, etc. While or metaphor of architecture to metaphors is *conceptual* many of its applications find linguistic metaphors helpful. Semiotics, for example, is a related field concerned with the general study of signs and symbols both in language and outside of it. Literary theorists study the use of language in artistic literature. Linguistics additionally draws on work from such diverse fields as psychology, speech-language pathology, informatics, computer science, philosophy, biology, human anatomy, neuroscience, sociology, anthropology, and acoustics. No scientific study of architecture as arts is known, particularly in the industrial age when business and not aesthetics dominates. In a time when aesthetics dominated the making of architecture aesthetics and the art of modeling a building into a particular form of art prevailed. Witness the debates in books like *The Fountainhead* and the plethora of arts[G] with architecture that flourished under the kings of Europe. The building, interiors and decoration were all commissioned as arts and expected to be aesthetically pleasing.

It undoubtedly is true that while the goal of ordinary language is to communicate, the primary goal of architecture is “*shelter*” and of art to entertain, educate, beautify and decorate). Actually the main purpose of architecture is to be an arbiter between owner and contractor as the owner’s surrogate and what the architect actually produces is not the shelter but the documents from which the shelter will be built. This distinction is relevant since the language of architecture is his documents (plans, sections, elevations, specifications, scale models, etc). The work of his design is habitable shelter so we can presume the built outcome for this metaphor whether built or not, whether on drawings or the real thing. While it is true that a by-product of architecture’s shelter is that which expresses in a system of symbols, such as character sequences, combined in various ways and following a set of rules, communicating thoughts, feelings, or instructions, architecture’s primary goal is to shelter by accommodating programmatic specifics peculiar to its needs and necessities. It is not only to communicate (express) but to shelter. In most of today’s contemporary architectural programs there would be little on aesthetics. Thankfully there are noteworthy exceptions which fill the pages of architectural journals.

It is for this reason that why till now architects have not been trained to think of their preferred choices of forms, patterns, structures, material, sizes and spaces responsible to impart any message, implication, thought or emotion. In fact, aside from mere pomp, pride, monumentalizing, trophy, corporate symbol, works of architecture stops there at “imparting”, commenting or symbolizing not trying to teach educate, specify and instruct but simply shelter.

However, there is no doubt that spaces, proportions, colors, textures, dimensions, sequence of spaces, planes in space, etc control , support and guide human behavior; they do so by depending on predicting human responses and behavior within a multidimensional world where they respond and act and not converse using words. My own study of behavioral psychology preceding my serious study of design gave my every later choice a possible predilection toward human behavior which other designers seemed not to be aware.

Yet, they were able to successfully design but the consequences of their decisions to express anything were not considered. Architecture is the making of metaphors, but more, it is also so-called “body language”; it makes metaphors, poetry, music, dance, ballet, etc. its is widely expressive but it does not converse hearing and responding as in normal human conversation. Conceptual Metaphors (not literal) occurs where the metaphor (or extension of meaning from one object to the other) is not in the words themselves but is the mental image. The words (or in the case of architecture the shapes, forms, materials, etc) are prompts for the user to perform mapping from one conventional image to another at the conceptual level. We find works which “welcome”, “open up”, “close”, “reject”, “turn-in”, “introvert”, “explode”, “shout”, etc. As the building shelters it entertains by getting and holding inhabitants attention, it welcomes and provides the opportunity to be fed, diverted, and amused. It is the place preferred to do one or another act as opposed to being and doing similar things outside. Metaphor is a figure of speech, not an architectural style, building term , kind of building- type but a condition of its creation and use, but it is not normally what architecture is.

I say normally because there are exceptions as monuments, exhibits, some public buildings; building which may house one thing but try to communicate something else.

The White House and Capital buildings are good examples communicating the US strength by the referent forms and and unity with the treusted past to contain its operations. The White House is the home of the revered first family whiles the Capital the place where our revered congress transacts its business. Works of architecture as metaphors may be more onomatopoetic, then a full sentence, may be grasped intuitively as analogy than overtly, may be sensed but never understood, may be used but never seen, and may be ignored, condemned and obliterated with less concern that of its human counterpart or preserved and worshipped as an icon as a landmark . As a landmark it communicates a history of what people have done in that place, a period of time; demarks a context and as a metaphor communicates its past in terms of itself. It marks time, space and place; and the human epoch. Conceptually it converses about the things it marks in terms of its designed characterization, its mere age or method of construction (they don't make them like that anymore).

While both the linguistic, conceptual and architectural metaphor makes the strange familiar, it is the architectural and artistic that identifies our position in society and is the emblem of who we are. We are not the metaphor but our experience of it is as real as anything else we know. As we perceive it, the metaphor is our virtual reality.

It contains our identity, signs and signals. Its' vocabulary, symbols and characters are symbiotic. The metaphor itself is symbiotic and our relationship to the metaphor is symbiosis. The metaphor is a change vehicle. It transforms and it is a transformer. It works internally between its' elements and upon us as we complete metaphor.

It is completion that users and audience participate in the ultimate creation of any metaphor. A work of literature, book, and play, novel may have similar affects but they are more then communicating but communication in a certain way. By the way the Latin for "transfer" is "metaphor". It is no wonder that my own study linking metaphors to architecture in the realms of cognitions should be parallel with important developments in cognitive linguistics.

This includes conceptual metaphors based on the idea that form-function correspondences are based on representations derived from embodied experience and constitute the basic units of language. (We are the sum total of all that has gone before us). So basic in fact that they may easily be the same basis as they are for architecture. This is at the heart of our presumption, that we can make metaphoric use of the term metaphor as for linguistics as for architecture. For any one work there are two metaphors: the concept and the manifestation of the concept. Richard the Lionhearted is the manifestation while the concept of the commonplace linking Richard to the Lion is understood without being visible. When we hear the voices of singers, the sounds of musician, the tones of speakers and the quality of a manifest metaphor we encounter the presence of other human beings. The essence of this presence authenticates our identity and we transfer their realty to our own.

Axioms:

Axioms (shown in Roman numerals) are self-evident principles that I have derived out of Ortony's *Metaphor and Thought*[1.0] and accept as true without proof as the basis for future arguments; a postulates or inferences including their warrants (which I have footnoted as 1._._ throughout). These axioms are in themselves clarification,

enlightenment, and illumination removing ambiguity where the derivative reference (Ortony) has many applications. Hopefully, these can be starting points from which other statements can be logically derived. Unlike theorems, axioms cannot be derived by principles of deduction as I wrote: "*The metametaphor theorem*" published by *Architectural Scientific Journal, Vol. No. 8; 1994 Beirut Arab University*. The below axioms define properties for the domain of a specific theory which evolved out of the stasis defending *architecture as an art*[G] and in that sense, a "postulate" and "assumption". Thusly, I presume to axiomatize a system of knowledge to show that these claims can be derived from a small, well-understood set of sentences (the axioms). "Universality, Global uniqueness, Sameness, Identity, and Identity abuse" are just some of the axioms of web architecture. Francis Hsu of Rutgers writes that "*Software Architecture Axioms is a worthy goal. First, let's be clear that software axioms are not necessarily mathematical in nature*".

Furthermore, in his book titled The Book of Architecture Axioms Gavin Terrill wrote: "*Don't put your resume ahead of the requirements Simplify essential complexity; diminish accidental complexity; You're negotiating more often than you think ;It's never too early to think about performance and resiliency testing; Fight repetition; Don't Control, but Observe and Architect as Janitor*". In "Axiomatic design in the customizing home building industry published by *Engineering, Construction and Architectural Management*; 2002;vol 9; issue 4;page 318-324 Kurt Psilander wrote that "*the developer would find a tool very useful that systematically and reliably analyses customer taste in terms of functional requirements (FRs)*".

Such a tool increases the reliability of the procedure the entrepreneur applies to chisel out a concrete project description based on a vision of the tastes of a specific group of customers. It also ensures that future agents do not distort the developer's specified FRs when design parameters are selected for the realization of the project. Axiomatic design is one method to support such a procedure. This tool was developed for the manufacturing industry but is applied here in the housing sector. Some hypothetical examples are presented". Aside from building-architect's axioms directing that "form follows function"; follow manufacturers requirements and local codes and ordinances, AIA standards for professional practice architectural axioms are few and far between.

28 dominant Axioms:

Axiom I. In making a habitable conceptual metaphor, after assimilating the program the very first step in the design process is to develop a "parte" (a communication directed to the merits (outcome) of the design process) ...it's the [B] resolution of the argument supported by claims, inferences, evidence and warrants) It is a "top-down" approach later followed by designs which meet the parte. The parte may follow the design process and be presented to sell the product.

Of courses this parte would have to converse with the parte of the street, neighborhood and township with all the social, political, and legal matters pertinent to such an undertaking. The generative metaphor is "seeing" -as, the "meta-pherein" or "carrying – over" of frames or perspectives from one domain of experience to another. You build one thing in terms of another where the other is the model, and, what you build is the application. It is the "ideal" of the proposed design. While architects may initially state an

ideal, it most likely evolves and even radically changes by the time the design process yields an architectural configuration (building manifestation).

Once achieved the “parte” (concept/gestalt) manifests and can be articulated. [1.1]

Axiom II. 1.2.1 Peculiarization, personalization and authentication are required for a metaphor to live. This too is the way the user metaphorize the using process, the user and the work empathize. In this is the art of making metaphors for the architect of public works. His metaphor must “read” the cultural, social and rightness of the metaphor’s proposed context. Whereas a dead metaphor is one which really does not contain any fresh metaphor insofar as it does not really “get thoughts across”; “language seems rather to help one person to construct out of his own stock of mental stuff something like a replica, or copy, of someone’s else’s thoughts”. I say: “Dead-in, Dead-out” and “you are what you eat” ; designs without concerns for scale, hierarchies, scenarios, surprise, delight, vistas, etc will be “dead”. They are “techne” driven engineering a building without architectural concerns. Such a work is a techne driven design where craft-like knowledge is called a ‘techne.’ It is most useful when the knowledge is practically applied, rather than theoretically or aesthetically applied.

It is the rational method involved in producing an object or accomplishing a building design. Techne is actually a system of practical knowledge. *As a* craft or art *technê* is the practice; of design which is informed by knowledge of forms such as the craft of managing a firm of architects where even virtue is a kind of *technê* of management and design practice, one that is based on an understanding of the profession, business and market.. *Technai* are such activities as drafting, specifying, managing, negotiating, programming, planning, supervising, and inspection; by association with

these *technai*, we can include house-building, mathematics, plumbing, making money, writing, and painting. So much so that the study and practice of design is devoid from the humanities and downplays theories of architecture developing rather the crafts, skill and understandings needed to engineer, plan, sketch, draw, delineate, specify, write, and design.

Axiom III. 1.2.2/1.2.3 Geometry of urban blocks and the location of building masses that reflect one another is a scheme to sharply define the volume and mass of the block and experience of city streets (Vincent Scully). In New York City the grid and this insistence on buildings reflecting the geometry of the grid is a metaphor of city-wide proportions.

The streets are defined by the 90 degree corners, planes and tightness of the cubes and rectangles to the city plan. In this way the metaphor of the overall and each building design no matter where it's location on the block; no matter when or in what sequence the metaphoric constraint of appropriateness or zoning formulas, all lead the ideas to flow from one to another architect.

Furthermore, the reader is able to “appreciate” (to value is to attach importance to a thing because of its worth) the street, its geometry, limits and linearity as an idea on the 1.2.2/1.2.3 conduit from the architect, through the metaphor and to the reader. 1.2.2/1.2.3 A conduit is a minor framework which overlooks words as containers and allows ideas and feelings to flow, unfettered and completely disembodied, into a kind of ambient space between human heads. Irregardless of the details the overall concept is “transferred “from one to the other, irrespective of sub-dominant and tertiary design elements.

Axiom IV. Building shapes and forms tend to reflect common geometry; building types tend to share common facilities; building code use designations influence the selection of applicable code requirements, architecture, forming clusters and community spaces create opportunities for neighborhood identity and nurturing cultural identity.

1.3 “It’s a strange thought, that culture is a product of man-made, unnatural things, that instead of culture shaping the architecture, architecture shapes the culture.

Axiom V. If the facade of a building is designed in one order of architecture you can presume the other parts are in like arrangements where the whole may be of that same order including its’ plan, section and details because of mapping and channeling one idea from one level to another. Frank Lloyd Wright designed his prairie architecture with dominant horizontal axis thrust to his structure as common to the horizontal axis of the land upon which the building sat. In geometrical formal parts of an architectural metaphor we note those common elements where fit, coupling and joints occur. 1.4 Metaphor maps the structure of one domain onto the structure of another”. 1.4.1 for example, the “superimposition of the image of an hour glass onto the image of a woman’s waist by virtue of their common shape”. As before the metaphor is conceptual; it is not the works themselves, but the mental images. In this case Metaphor is a mental image. “Each metaphorical mapping preserves image-schema structure:” In acting it is called a” handle” where your whole character’s peculiarity is remember by one acting device (accent, slang, twang, wiggle, walk, snort, etc) ;in architecture the building’s roof top, cladding, silhouette, interior finishes, lighting, gargoyles, entrance, rounded corners, etc.

Axiom VI. Since metaphor is the main mechanism through which we comprehend abstract concepts and perform abstract reasoning: 1.4.3 what is built is first

thought and conceived separately from building as thinking and conceiving is separate from the outward expression, so metaphor is a process and architectural metaphor is a process and what we see is what the process issues; not the manifest metaphor.

Axiom VII. The metaphor-building clarifies our place, status and value.

As Metaphor is the main mechanism through which we comprehend abstract concepts and perform abstract reasoning so works of architecture inform our social, psychological and political condition.

Axiom VIII. 1.4.4 Much subject matter, from the most mundane to the most abstruse scientific theories, can only be comprehended via metaphor. The metaphor is engrafted with knowledge about the state of contemporary technology, scientific advancement, social taste and community importance, even an anonymous Florentine back ally's brick wall, carved door, wall fountain, shuttered windows, building height, coloration of the fresco.

Axiom IX. The architects process and what is assembled may or may not correlate; likewise what we perceive of what we see is not necessarily what we think or believe we have seen. As thought, poetry, song, etc architecture is both precise around the technique but vague about the cultural, psychic and social bridges. Yet architecture is rich with its icons, classic silhouettes, orders of architecture, styles and periods. 1.4.5 Metaphor is fundamentally conceptual, not linguistic, in nature. It is the difference

between the thing and what we perceive. Our perception of the building is the metaphor while the building is the evidence of the design process and the keys to unlock our mind.

Axiom X. 1.4.6 Metaphorical language (building) is a surface manifestation of conceptual (program, design and contact documents) metaphor. The built metaphor is the residue, excrement, product and periphery of the deep and complex reality of the building's creative process and extant reality. As we don't know the inner workings of our car and yet are able to drive so we can use our building. What we design and what we read not the metaphor but a surface manifestation of the concept metaphor. A concept which we can only know as well as we is able to discern metaphorical language. The construction and the metaphor beneath are mapped by the building being the manifestation of the hidden conceptual metaphor. To know the conceptual metaphor we must read the building.

Axiom XI. 1.4.7 Through much of our conceptual system is metaphorical; a significant part of it is non-metaphorical. Metaphorical understanding is grounded in non-metaphorical understanding. Our primary experiences grounded in the laws of physics of gravity, plasticity, liquids, winds, sunlight, etc all contribute to our metaphorical understanding often the conceptual commonality accepting the strange.

Axiom XII. The whole of the conceptual metaphor is designed in such a way as to clarify, orient and provide "concrete" reification of all the design parameters into a "highly structured" work; a work which homogenizes all these diverse and disjointed systems and operations into a well working machine. 1.4.8 Metaphor allows us to understand a relatively abstract or inherently unstructured subject matter in terms of a more concrete, or at least, more highly structured subject matter. A structured building is

a structured subject offering access to relatively abstract and unstructured subject matter. Hence architects translate their architectural conception from philosophy, psychology, sociology, etc into two dimensional scaled drawings and then to real-life full-scale multi dimensions conventions consisting of conventional materials, building elements (doors, windows, stairs, etc).

Axiom XIII. Sifting through the program the architect seeks the “commonality” between the reality and experience to make the metaphor. Mapping is only possible when he knows the “commonplace”, the commonality, the characteristic common to both, the terms that both the source and the target have in common in which the mapping takes place. The architect’s design agenda and the user’s requirements find both their commonalities and differences.

As the architect structures his program, design and specifications he simultaneously structures the metaphor of his work of architecture. Architecture consists of program specifics where the conditions, operations, goals and ideals are from heretofore unrelated and distant contexts but are themselves metaphors “mapped across conceptual domains”. Architects translate their architectural conception from philosophy, psychology, sociology, etc into two dimensional scaled drawings and then to real life full scale multi dimensions conventions consisting of conventional materials, building elements (doors, windows, stairs, etc).

1.4.9 As maps are the result of cartographers rendering existing into a graphics for reading so is mapping to the reading of metaphors where the reader renders understanding from one source to another. As the cartographer seeks lines, symbols and shadings to articulate the world reality so the reader’s choices of heretofore unrelated and seemingly unrelated are found to have an essence common to

both the reality and the rendition so that the metaphor can be repeated becoming the readers new vocabulary. As the reader can describe the route he can identify the building.

1.4. 10 Each mapping (where mapping is the systematic set of correspondences that exist between constituent elements of the source and the target domain. Many elements of target concepts come from source domains and are not preexisting. To know a conceptual metaphor is to know the set of mappings that applies to a given source-target pairing. The same idea of mapping between source and target is used to describe analogical reasoning and inferences. For example, reception area to receive people, doors and door frames, columns as vertical supports, parking spaces for cars, Iron and stained glass design patterns, and typical design details appropriated for a given building system.

1.4.11 Aside from articulating a program architects carry-over their experiences with materials, physics, art, culture, building codes, structures, plasticity, etc. to form a metaphor. Identifying conditions, operations, ideals and goals are combined to form plans, sections and elevations which are then translated in to contract documents.

Later the contractors map this metaphor based on their schemes of cost, schedule and quality control into schedules and control documents. It is not until equipment, laborers and materials are brought to the site that the metaphor starts to form. Once formed the only evidence for the user (reader) are the thousands of cues from every angle, outside and inside to enable use and understanding. An informed user can read the building's history from its inception to opening day. 1.4.11 The scale of habitable metaphors is the intrinsic relation between the human figure and his surroundings as measured, proportioned and sensed. It is dramatically represented by Da Vinci's Vitruvian Man is based on the correlations of ideal human proportions with geometry described by the

ancient Roman architect Vitruvius.1.4.11 It seems that onomatopoeics are metaphors and can be onomatopoeic (grouping of words that imitates the sound it is describing, suggesting its source object, such as "click", "bunk", "clang", "buzz", "bang", or animal noises such as "oink", "moo", or "meow"). In this case an assemblage instead of a sound.

As a non-linguistic it has impact beyond words and is still a metaphor. Then a metaphor is much more than the sum of its parts and is beyond any of its constituent constructions, parts and systems.

The buildings' very existence is a metaphor and may not be valued much more than an onomatopoeic. 1.4.12 Mappings are not arbitrary, but grounded in the body and in every day experience and knowledge. Mapping and making metaphors are synonymous. The person and not the work make the metaphor.

Without the body and the experience of either the author or the reader nothing is being made. The thing does not have but the persons have the experiences. As language, craft, and skills are learned by exercise, repetition and every day application so are mappings. Mappings are not subject to individual judgment or preference: but as a result of making seeking and finding the commonality by practice.

1.4.13 A conceptual system contains thousands of conventional metaphorical mappings which form a highly structured subsystem of the conceptual system. Over the year's society, cultures, families and individuals experience and store a plethora of mapping routines which are part of society's mapping vocabulary. As a potential user, when encountering a new building-type, such as a hi-tech manufacturing center, we call upon our highly structured subsystem to find conceptual systems which will work to navigate this particular event. 1.4.11 Architecture as a surrogate is accepted at face value. As a

surrogate (a work of architecture) is "a replacement that is used as a means for transmitting benefits from a context in which its' user may not be a part". Architecture's metaphors bridge from the program, designs and contactors a shelter and trusted habitat. The user enters and occupies the habitat with him having formulated but not articulated any its characteristics. Yet it works. "It makes sense, therefore, to speak of two sides to a surrogate, the user side and the context side (from which the user is absent or unable to function). " Each of us uses others to achieve a benefit for ourselves. "We have that ability". "None of us is just a person, a lived body, or just an organism. We are all three and more. We are singulars who own and express ourselves in and through them.

As Weiss proclaims that we cannot separate these three from each other so that it follows that we may find it impossible to separate us from the external metaphors. Inferences that are not yet warranted can be real even before we have the evidence. Metaphors are accepted at face value and architecture is accepted at face value. Accustomed to surrogates architecture is made by assuming these connections are real and have benefit. Until they are built and used we trust that they will benefit the end user. Assembling the ambulatory we assume the occupancy, frequency and destinations. We each are surrogates to one another yet fitted into one message. When this passage had been used as read as had been other passages, corridors and links. Like a linguistic, the building stands, like a great, stone dagger, *emphatic* against the sky. The stair, the exit, the space calls, gives emphasis and is strongly expressive.

Axiom XIV. Elegant architectural metaphors are those in which the big idea and the smallest of details echo and reinforce one another. Contemporary architects wrapping their parte in "green", "myths" and eclectic images" are no less guilty than was their

predecessors of the Bauhaus exuding asymmetry, tension and dissonance as were the classics and renaissance insisting on unity, symmetry and balance. The architect's parte and the user's grasp of cliché parte were expected and easy "fill-in" proving the learned mappings, learned inference trail and familiarity with bridging.

1.5.1 People ascertain the deep metaphor that underlies one or more surface metaphors by filling in terms of an implicit analogy". A unique building metaphor may be reckoned by its apparent similarity to another from a previous experience. As a grain silo is to a methane gas plant and to oil tank storage, what may be implicit are the shapes, appurtenances, and locations. 1.5.2 We see the architectural metaphor, we read its extent, we synapse, analogies and metaphorize absorbing its information, contextualizing and as much as possible resurrecting its reasons for creation.

The architectural metaphor only speaks through its apparent shape, form, volume, space, material, etc that the concepts which underlie each are known to the user as they would to a painting, poem, or concerto. 1.5.3 Architecture is often more suggestive and trusting rather than being pedantic; it leads and directs circulation, use recognition while abstracting shapes and forms heretofore unknown but ergonomic. Furthermore as observation, analysis and use fill in the gaps users inference the locations of concealed rooms, passages and supports; the user infers from a typology of the type a warehouse of expectations and similes to this metaphor from others. In this way there are the perceived and the representations they perceive which represents when explored and inert what we call beautiful, pleasurable and wonderful. Upon entering a traditional church in any culture we anticipate finding a common vocabulary of vestibule, baptistery, pews, chancel, and

choir area including transepts, chapels, statuary, altar, apse, sacristy, ambulatory and side altars.

1.5.4 So while architecture is the making of metaphors and architects are making metaphors, their works, though metaphoric, are not themselves the metaphors but the shadow of the metaphor which exists elsewhere in the minds of both the creator and the user, and, it is there that the creator and the user may have a commonality (not commonplace) . Ideally, if I design my own house, decorate my own room there will likely be that commonality. If an architect is selected from a particular neighborhood his metaphor will likely be sympathetic (common) to the culture of the area. Or, a concerted effort on the part of the design team to assemble the relevant and commonplace information. 1.5.5 Architects make a spatial representation in which local subspaces can be mapped into points of higher-order hyper-spaces and vice versa is possible because they have a common set of dimensions. Architects organize broad categories of operations and their subsets seeing that they are different from each others so as to warrant a separate group and that their subsets fit because they have common operational, functional conditions, operations, models and object is. Hotel front and back of the house operations; Hospital surgical from outpatient and both from administration and offices are obvious sets and subsets.

Axiom XV. Shelter and its controlled creation contains sensual ,graphic and strategic information fulfilling shelter needs by real deed rather than words of hope and future expectations. The building and not its metaphor is direct while its metaphor is indirect and being the sticks and stones of its manifestation. Yet the metaphor may be explained with language it would not accomplish the buildings shelter metaphor. The

shelter prototype and its incarnation is itself indirect since its referent is obscured by contextual realities. 1.6.1 There is a difference between the indirect uses of metaphor verses the direct use of language to explain the world.1.6.2 The distinctions and relationships between micro and macro metaphors and the way they can inform one another is as the form of design may refer to its program, or a connector reflects the concept of articulation as a design concept.

Where articulation is being jointed together as a joint between two separable parts in the sense of "divide (vocal sounds) into distinct and significant parts" or where an architect parses the program and reifies words to graphic representations bringing together desperate and seeming unrelated parts to join into parts and sub parts to make a whole.

Axiom XVI. The two domains of the building and its context may have analogies that relate to both. The site and the building will absorb a high amount of pedestrian traffic. Both are ambulatories and both guide and protect the pedestrian. Like a building metaphor's common elements with an uncommon application the common connects to the unfamiliar and the architect is able to find a way to bring them together and the user discovers their relevance. The neighborhoods walkways and the access to and through the building are analogous. As a child a Kressge 5 and 10 was built as a huge and wide corridor diagonally connecting Westchester Avenue with Southern Boulevard thus saving lots of steps, time and distance but providing a wonderful weather-free comfort- zone cutting through this block. The joining corners of the two avenues were filled with shops facing their streets which we could alternately frequent as an alternate. Alleys in big cities and Munich subway shopping malls are also examples of these design analogies,

called galleries, alleys, mews, etc. 1.7.1 Metaphors work by “reference to analogies that are known to relate to the two domains”.

Axiom XVII. A work of architecture has integrity if the whole and the parts share the same architectural vocabulary with respect to its building systems, materials and design philosophy. In a building with dominant 90 degree, cube and squares we do not expect to find plastic, curved and circular elements. (Not that there aren't many successful introductions of unlike geometries) On the other hand if we can reason these differences we still would question this disparity to the expression of that incongruous relationship in the final work .For this reason we have design juries, inspections and rejects of design and during the course of construction, to stop a part or incongruity between the design and the construction and between a part and the whole.

Buildings designed to be seen from the highway or visited for a fleeting moment are designed with one set of expectations while a home, terminal, office, etc may be more elaborate and scaled for scrutiny. A built metaphor with all of its metaphorical baggage call to mind another meaning and corresponding set of truths. The metaphor is not part of the building but is made from those meanings. The meanings of one and the meanings of another may be similar so that the other comes to mind. 1.8.1 A “problem of the metaphor concerns the relations between the word and sentence meaning, on the one hand, and speaker's meaning or utterance meaning, on the other”.

“Whenever we talk about the metaphorical meaning of a word, expression, or sentence, we are talking about what a speaker might utter it to mean, in a way it that departs from what the word, expression or sentence actually means”. The complaint against Frank Lloyd Wright's Fifth Avenue Guggenheim Museum was the inferior

quality of the concrete pours resulting in uneven and mottled surfaces. The design and the expression are often incongruous and out of the control of the architect. Such work's often are carried out with contactors selected prior to the design beginning and are part of the design process. 1.8.2 What are the principles which relate literal sentence meaning to metaphorical utterance meaning" where one is comprehensive, complete and coordinated while the other is merely an incomplete scanty indication of a non specific.

1.8.3 How does on thing remind us of another? The basic principle of an expression with its literal meaning and corresponding truth-conditions can, in various ways that are specific to the metaphor, call to mind another meaning and corresponding set of truths". Unlike a legal brief, specification and engineering document a work of architecture with all its metaphors tolerates variety of interpretations, innuendo and diverse translations.

Axiom XVIII. Building style and decoration are often adaptations of a former and existing building emphasizing economic and financial status, quest for status, adaptations to local common ground of knowledge, beliefs, and attitudes. Choice of structural, building systems, building height and color are often in the vernacular of the building use (office, residential, commercial, industrial, etc.) and the zoned and neighboring fashion. 1.9.1 Explaining tropes (turn, twist, conceptual guises, and figurations) 'Human cognition is fundamentally shaped by various processes of figuration'. "The ease with which many figurative (Based on or making use of figures {abounding in or fond of figures of speech: Elizabethan poetry is highly figurative} of speech; metaphorical: figurative language) utterances are comprehended are as often been attributed to the constraining influence of the context"Including "the common

ground of knowledge, beliefs, and attitudes recognized as being shared by speakers and listeners (architects and users (clients, public). One can say one's speech is affected; affected by peer pressure and the urge to communicate and adapt. Medieval German, French and Italian cities are replete with merchant building's roofs configured, elongated and attenuated to be higher than others. Near the Rhine, Germany's Trier is a fine example.

Axiom XIX. A habitable metaphor is not meant for the user to fully, continuously and forever recall all that went into its' production. The fact that the roof silhouette was to emulate a Belvedere in Florence, windows from a palace in Sienna, and stucco from Tyrol is lost over time. Even, the design principles so astutely applied by the likes of Paul Rudolf, Richard Meier, or Marcel Breuer may be unnoticed in favor of other internal focuses. These many design considerations may be the metaphor that gave the project its gestalt that enabled the preparation of the documents that in turn were faithful interpreted by skilled contactors and craftsman. Yet at each turn it is the affect of metaphor and not necessarily its specifics that make a good design not a great work of architecture or a working metaphor. 1.10.1" A metaphor involves a nonliteral use of language". A non-literal use of language means that what is said is for affect and not for specificity. At each moment in its use the metaphor may mean different things, least of which may be any intended by its authors.

Axiom XX. Matching, copying and emulating the design of other buildings or adapting the design of one to the current project is adapted to the more familiar. In the Tyrol offices are often housed in larger chalets with it all the roof, hardware, doors and flower boxes of the more typical residence. The new building is made to appear like the

others. Often the signature of the original dominates the new. There is no attempt to hide the emulation. Users will easily transfer their experience from the familiar old to the emulated new. Appreciation is when a metaphor as an abbreviated simile (a figure of speech in which two unlike things are explicitly compared, as in “she is like a rose.”) designed to appreciate similarities and analogies.

1.11.1 In psychology “appreciation” (Herbert (1898)) was a general term for those mental process whereby an attached experience is brought into relation with an already acquired and familiar conceptual system (Encoding, mapping, categorizing, inference, assimilation and accommodation, attribution, etc).1.11.2 Miller sites Webster’s International Dictionary (2nd edition): “a metaphor may be regard as a compressed simile, the comparison implied in the former being explicit in the latter. In the making the comparison explicit is the work of the designer and reader”. “In principle, three steps: recognition, reconstruction, and interpretation, must be taken in understating metaphors, although the simplest instance the processing may occur so rapidly that all three blend into a single mental act.” When we face a new metaphor (building) a new context with its own vocabulary is presented, one which the creator must find and connect and the other which the reader must read and transfer from previous experience.

Axiom XXI. Buildings in one group often have more known versions than others. In one city exposed wide flanged steel structures may be preferred to the reinforced concrete in another. In Dubai and Qatar High rise and multi story and iconic are synonymous and know to represent commerce buildings. Iconic is the trigger for all the rest. High and rise used together recalls how the elevator and quest for grated real estate earnings encouraged the higher number of floors per single zoned building lot. 1.12.1

Prototype theory is a mode of graded *categorization* in *cognitive science*, where some members of a category are more central than others. For example, when asked to give an example of the concept furniture, chair is more frequently cited than, say, stool.” I asked a New Yorker to give an example of an office building and they answered the Empire State Building it would be because of its height, and reputation, In fact the office building and not the “church “building shape has come to be a metaphor of the city. New York is an office building city. I can see only a flash glimpse and I will know it is Manhattan.

1.12.2 Their metaphor “cigarettes are time bombs” cigarettes are assigned to a category of time bombs, what the time bomb being a prototypical example of the set of things which can abruptly cause serious damage at some point in the future.”1.12.3
“Metaphors are generally used to describe something new by reference to something familiar (Black, 1962b), not just in conversation, but in such diverse areas as science and psychotherapy. Metaphors are not just nice, they are necessary. They are necessary for casting abstract concepts in terms of the apprehendable, as we do, for example, when we metaphorically extend spatial concepts and spatial terms to the realms of temporal concepts and temporal terms”. Most designers of shelters are predisposed to the geometry of the rectangle and its variations (with exceptions of amorphic and ergonomic) and present the completed design as its offspring and/or compounded variations. The built variation certainly refers to its base and vice versa. It is not just nice but necessary; otherwise it could not be built. Most building types and classical orders from Egypt, Greece and Rome to the skewed iconic towers of the emirates hearken back to their essence as a kind of rectangle.

Axiom XXII. Without have an apriori parte a design may evolve until a final design is achieved which is no more representative as whole from any other building of its type. Escarlata Partablela of Toledo brought me, a picnic lunch and her guitar to a small mountain across from her city.

She urged me to sketch while she serenaded. After a while I noticed her wry smile as she scanned my sketches and when I noticed how familiar they looked she confessed that she had sat me down on the very spot El Greco sat to sketch “View Of Toledo”.

Arab “tentness” and “home-sweet-home” map basics from the “home-sweet-home” to the Arabness to make all the bits and pieces be understood.

Architects choose building elements from catalogs and in the most metaphoric circumstances designs elements form scratch. Metaphor buildings may or may not be composed of element metaphors and buildings which are analogies may of or may not have elements designed metaphorically. However, it is less likely that an analogues design will contain metaphorical elements.

Architects and clients begin their conversation by finding both the abstract and commonplace to condition, model, and purpose and describe the operations. Selecting existing commonplace and choosing special design is determined by which can be analogous and which do not exist.

1.13.1 Much of architectural making of metaphors is a matter of mapping, diagramming and combining to conclude the validity of combining and matching unlike materials, shapes, & systems. In this way any one of the metaphors and the whole system of bridging and carrying over is metaphoric.1.13.2 ***Metaphor is reasoning using abstract characters whereas reason by analogy is a straight forward extension of its use in***

commonplace reasoning. 1.13.3 *“In processing analogy, people implicitly focus on certain kinds of commonalities and ignore others”.* 1.13.4 *An analogy is a kind of highly selective similarity where we focus on certain commonalities and ignore others. The commonality is not that they are both built out of bricks but that they both take in resources to operate and to generate their products.* 1.13.5 On the creative architect’s side: “The central idea is that an analogy is a mapping of knowledge from one domain (the base) into another (the target) such that a system of relations that holds among the base objects also holds among the target objects”.

On the user’s side in interpreting an analogy, people seek to put objects of the base in one-to-one correspondence with the objects of the targets as to obtain the maximum structural match 1.13.6 “The corresponding objects in the base and target need not resemble each other; rather object correspondences are determined by the like roles in the matching relational structures.” 1.13.7 “Thus, an analogy is a way of aligning and focusing on rational commonalities independently of the objects in which those relationships are embedded.” 1.13.8 “Central to the mapping process is the principle of “systematicity: people prefer to map systems of predicates favored by higher-order relations with inferential import (the Arab tent), rather than to map isolated predicates. The systematicity principle reflects a tacit preference for coherence and inferential power in interpreting analogy”. 1.13.9 “No extraneous associations: only commonalities strengthen an analogy. Further relations and associations between the base and target- for example, thematic consecutions- do not contribute to the analogy.”

Axiom XXIII. More often than not designers are influenced by the existence of similar types than to re-invent themselves from scratch. Architects design by translating

concepts into two dimensional graphics that which ultimately imply a multidimensional future reality. She tests the horizontal and vertical space finding accommodation and commonality of adjacency, connectivity and inclusiveness.

It is the commonplace and not the abstract necessity that communicates more readily. The architect is challenged to imbue in the design the more subtle analogy than the obvious. 1.14.1 Interaction view” of metaphor where metaphors work by applying to the principle (literal) subject of the metaphor a system of “associated implications” characteristic of the metaphorical secondary subject. These implications are typically provided by the received “commonplaces” (ordinary; undistinguished or uninteresting; without individuality: a commonplace person.); about the secondary subject: ‘The success of the metaphor rests on its success in conveying to the listener (Reader) some quieter defined respects of similarity or analogy between the principle and secondary subject.’ 1.14.2 Metaphors simply impart their commonplace not necessity to their similarity or analogous.

Axiom XXIV. Architectural metaphors are all about names, titles, and the access to that the work provides for the reader to learn and develop. At its best the vocabulary of the parts and whole of the work is an encyclopedia and cultural building block. The work incorporates (is imbued with) the current state of man’s culture and society which is an open book for the reader. The freedom of both the creator and reader to dub and show is all part of the learning experience of the metaphor.

However objective, thorough and scientific the designer the design tools the work gets dubbed with information we may call style, personality, and identity above and beyond the program and its basic design. It is additional information engrafted into the form not

necessarily overtly and expressly required. Dubbing (imbuing) may occur in the making of metaphors as a way in which the design itself is conceived and brought together.

Dubbing may in fact be the process which created the work as an intuitive act. Imbuing is often what distinguishes the famous from the ordinary architect and the way the architect dubs is what critics calls the art [G] of architecture. 1.15.1 “Dubbing” (invest with any name, character, dignity, or title; style; name; call) and “epistemic access” (relating to, or involving knowledge; cognitive.).”When dubbing is abandoned the link between language and the world disappears”, adding a sound track to a film is the best use of the word where the picture remains but the experience of the whole is changed.

Now we have both picture and sound. Today’s works of architecture are minimal and only by dubbing the program can functionally superficial non-minimal features be added. However, the architect’s artistry (way of design, proportioning, arranging spaces, selections of materials, buildings systems, etc. can be dubbed to enhance an otherwise “plain vanilla” solution.

Axiom XXV. Climbing the stairs of a pyramid in Mexico City or a fire stair in a high rise is essentially the same except for the impact of its context and what the stair connects (create and base) and the object on which the stair ascends and descends. Little old ladies in the tiniest Italian village can tell in the minutest detail all about every building, street and area. She has learned and passed on the “knowledge” from her ancestors and is as trained as its creators but in a totally different way. Hers is the act of perception and reader who must recreate and challenge her memory and recollections. She does not have to work at design but at reliving and imagining the design process to find the details and the whole of the building and its social, political and chronological

context. Structural engineers design from the top down so as to accumulate the additive loads to the consecutive lower members and ultimately the foundation which bears it all.

Conceptual design and first impressions both begin with the general and go to the specific. Architecture combines and confirms the secular (of this time), “how things really are” with the gestalt of personal, social, community and private importance. If art is the making of metaphors and it has no real use then how significant is architecture with both “reality” and fantasy/ imagination combined and confirmed by its very existence. 1.16.1

Pylyshyn explains: “.....consider new concepts as being characterized in terms of old ones (plus logical conjunctives)” 2.0 As William J. Gordon points out we make the strange familiar by talking about one thing in terms of another. Pylyshyn: "On the other hand, if it were possible to observe and to acquire new “knowledge” without the benefit of these concepts (conceptual schemata (an underlying organizational pattern or structure; conceptual framework) which are the medium of thought. 1.16.2 “Knowledge” would not itself be conceptual or be expressed in the medium of thought, and therefore it would not be cognitively structured, integrated with other knowledge, or even comprehended.

Hence, it would be intellectually inaccessible”. In other words we would not know that we know. Where knowing is the Greek for suffer, or experience. This was the Greek ideal proved in Oedipus; “through suffering man learns”; we know that we know. Therefore, when we observe that architecture makes metaphors we mean that we know that we know that works exists and we can read authors messages. We learn the work.

1.16.3 Pulling from three dimensional and two dimensional means and methods, from asymmetrical and symmetrical, and from spatial and volumetric design principles the architect assembles metaphor metaphorically by associating and carrying-over these

principles applying to the current program to lift and stretch the ideas into space and across the range of disassociated ideas and concepts making a new and very strange metaphor unlike anything ever created yet filled with thousands of familiar signs and elements that make it work . 1.16.4 About the difference between words (which are limited and specific to concepts Pylyshyn notes: "...in the case of words there is a component of reason and choice which mediates between cognitive content and outward expression. I can choose what words I use, whereas I cannot in the same sense choose in terms of which I represent the world." So architects and readers deal with materials, structures, systems and leave the concepts to a variety of possible outcomes. 1.16.5 About a "top-down strategy" called "structured programming" in computer science allows for a point of entry into the development of a new idea where you begin with an idea and after testing and developing that idea bringing everyday knowledge to bear on the development of theoretical ideas with some confidences that they are new either incoherent nor contradictory, and furthermore with some way of exploring what they entail. 1.16.6 Explaining this approach as a "skyhook-skyscraper" construction of science from the roof down to the yet un-constructed foundations" describes going from the general to the specific in and decreasing general to an increasing amount of detail and pragmatic evidence, referents, claims and resolutions. 1.16.7 "The difference between literal and metaphorical description lies primarily in such pragmatic consideration as (1) the stability, referential specificity, and general acceptance of terms: and (2) the perception, shared by those who use the terms, that the resulting description characterizes the world as it really is, rather than being a convenient way of talking about it, or a way of capturing superficial resemblances". 1.16.8 Pylyshyn asserts that: "metaphor induces a

(partial) equivalence between two known phenomenons; a literal account describes the phenomenon in authentic terms in which it is seen.

Axiom XXVI. Modern architecture wants to express the truth about the building's systems, materials, open life styles, use of light and air and bringing nature into the buildings environment, not to mention ridding building of the irrelevant and time worn cliches of building design decoration, and traditional principles of classical architecture as professed by the Beaux-Arts movement. For equipoise "Unity, symmetry and balance" were replaced by "asymmetrical tensional relationships" between, "dominant, subdominant and tertiary" forms and the results of science and engineering influence on architectural design, a new design metaphor was born. The Bauhaus found the metaphor in all the arts, the commonalties in making jewelry, furniture, architecture, interior design, decoration, lighting, industrial design, etc.1.17.1 "Analogical transfer theory ("instructive metaphors create an analogy between a to-be-learned- system (target domain) and a familiar system (metaphoric domain

Axiom XXVII. Metaphorical teaching strategies often lead to better and more memorable learning than do explicit strategies which explains why urbanites have a "street smarts" that is missing from sub-urban; they actually learn from the metaphors that make up the context. Of course this is in addition to the social aspects of urbanity which is again influenced by the opportunities of urban metaphors: parks, play grounds, main streets, broadways, avenues, streets, sidewalks, plazas, downtown, markets, street vendors, etc. When visiting new cities in another country one is immediately confronted with metaphors which create similarities as interactive and comparative as we seek to find similarities and differences with what we already known in our home context.

Visiting, sketching and writing about over seventy European cities I noted the character and ambience of each and the differences between one and another. Each metaphor was of the past's impact on the future with the unique design of crafts, building materials, and skills that were peculiar to their times but were not enjoyed in the present. In this context there are the natives who experience these metaphors all their lives and the visitor who is first learning the lesson of these metaphors. Both experience these in different ways.

The native knows the place and comprehends both the old and the new knowledge domains whereas the visitor the very same metaphor may be interactive, creating the similarity under construction. The visitor (this is my word) may "well be acquiring one of the constitutive or residual metaphors of the place (this is my word) at the same time; same metaphor, different experiences. 1.18.1 "Radically new knowledge results from a change in modes of representation of knowledge, whereas a comparative metaphor occurs within the existing representations which serve to render the comparison sensible. The comparative level of metaphor might allow for extensions of already existing knowledge, but would not provide a new form of understanding.

Axiom XXVIII. Many architects can make metaphors to overcome cognitive limitations and resort to graphics rather than language to explain the metaphor. Metaphor as a design act serves as a graphic tool for overcoming cognitive limitations. As most artists their language is beyond speech and to the peculiar craft of their art of which their practice and exercise develops new capacity and opportunity to teach and express thought outside of the linguistics but is nevertheless perhaps as valuable and worthy.

Architects both compose the program and reify its contents from words to diagrams and diagrams to two dimensional graphics and three dimensional models to reify and bring-out (educate) the user's mind and fulfillment of unspoken and hidden needs.

Needs which many or may not have been programmed and intended; the metaphor is the final resolution until it is built and used. Then it is subject to further tests of time, audience, markets, trends, fashions, social politics, demographic shifts, economics, and cultural changes. 1.19.1 Metaphors have a way of extending our capacities for communications. 1.19.2 "Speech is a fleeting, temporarily linear means of communicating, coupled with the fact that that, as human beings, we are limited in how much information we can maintain and process at any one time in active memory, means that as speakers we can always benefit from tools for efficiently bringing information into active memory, encoding it for communication, and recording it, as listeners, in some memorable fashion." 1.19.3 Metaphor is the solution insofar as it encodes and captures the information:" transferring chunks of experience from well –known to less well known contexts; 1.19.4 The vividness thesis, which maintains that metaphors permit and impress a more memorable learning due to the greater imagery or concreteness or vividness of the "full-blooded experience" conjured up by the metaphorical vehicle; 1.19.5 and the inexpressibility thesis, in which it is noted that certain aspects of natural experience are never encoded in language and that metaphors carry with them the extra meanings never encoded in language. One picture is worth a thousand words and how valuable are the arts as makers of who we are as a people, society and time. 1.19.6 "The mnemonic (intended to assist the memory) function of metaphor as expressed by Ortony's

vividness thesis also points to the value of metaphor as a tool for producing durable learning from unending speech

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Zenon W. Pylyshyn is Board of Governors Professor of Cognitive Science at Rutgers Center for Cognitive Science. He is the author of *Seeing and Visualizing: It's Not what You Think* (2003) and *Computation and Cognition: toward a Foundation for Cognitive Science* (1984), both published by The MIT Press, as well as over a hundred scientific papers on perception, attention, and the computational theory of mind.

Metaphor and Education is the final section:

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Footnotes:

A. Background: The first lectures "Architecture as the Making of Metaphors" [3] were organized and conducted near the Art and Architecture building at the Museum of Fine Arts Yale University 11/02/67 until 12/04/67. The guest speakers were: Paul Weiss, William J. Gordon, Christopher Tunnard, Vincent Scully, Turan Onat, Kent Bloomer, Peter Millard, Robert Venturi, Charles Moore, Forrest Wilson, and John Cage.

Three major questions confront both the student and the practitioner of architecture: First, what is architecture? Second, why is architecture an art? Third, what are the architecture's organizing principles? Many answers to these questions have been provided by scholars and professionals, but seldom with enough rigors to satisfy close scrutiny. Nor have the questions been attached to proven and workable forms, so that the art could be developed beyond the limits of personal feelings.

B. "Argumentation: The Study of Effective Reasoning, 2nd Edition; by Professor Dr. David Zarefsky of Northwestern University and published by The Teaching Company, 2005 of Chantilly, Virginia

C. 4. Irving Kriesberg; the American painter was born in 1919. He studied painting in America at The Art Institute of Chicago and the University of Chicago from 1938-1941 and later in Mexico from 1942-1946. Kriesberg began his interest in art as a cartoonist in high school in Chicago. In the 1930's he spent many days sketching the work of the great masters Titian & Rembrandt when visiting The Art Institute of Chicago. In the late 1930's he came under the influence of modern art via School of Paris exhibit.

D. 5.0 “Difference and Identity” : 4.0 Gilles Deleuze (French pronunciation: [ʒil dələʒ]), (18 January 1925 – 4 November 1995) was a French philosopher of the late 20th century. Deleuze's main philosophical project in his early works (i.e., those prior to his collaborations with Guattari) can be baldly summarized as a systematic inversion of the traditional metaphysical relationship between identity and *difference*. Traditionally, difference is seen as derivative from identity: e.g., to say that "X is different from Y" assumes some X and Y with at least relatively stable identities. To the contrary, Deleuze claims that all identities are effects of difference. Identities are neither logically nor metaphysically prior to difference, does Deleuze argue, "given that there are differences of nature between things of the same genus."

That is, not only are no two things ever the same, the categories we use to identify individuals in the first place derive from differences. Apparent identities such as "X" are composed of endless series of differences, where "X" = "the difference between x and x'", and "x" = "the difference between..." and so forth. Difference goes all the way down.

To confront reality honestly, Deleuze claims, we must grasp beings exactly as they are, and concepts of identity (forms, categories, resemblances, unities of

apperception, predicates, etc.) fail to attain difference in itself. "If philosophy has a positive and direct relation to things, it is only insofar as philosophy claims to grasp the thing itself, according to what it is, in its difference from everything it is not, in other words, in its internal difference." In analyzing a metaphor we ask: "What are its commonalities and significant differences and what are the characteristics common to both".

E. Identifying Metaphor in Language: a cognitive approach Style, fall, 2002 by Gerard J. Steen

F. The Contemporary Theory of Metaphor: a perspective from Chinese by Ning Yu

G. *Art* is the intentional and skillful act and/or product applying a technique and differs from natural but pleasing behaviors and useful or decorative products in their intent and application of a developed technique and skill with that technique. Art is not limited to fields, persons or institutions as science, government, security, architecture, engineering, administration, construction, design, decorating, sports, etc. On the other hand in each there are both natural and artistic where metaphors (conceptual and/technical) make the difference, art is something perfected and well done in that field. For example, the difference between an artistic copy and the original is the art of originality and authorship in that it documents a creative process lacking in the copy.

H. Axiom's contextual forms

Three levels of axioms matching three levels of disciplines:

1. Multidiscipline: Macro most general where the metaphors and axioms and metaphors used by the widest and diverse disciplines, users and societies. All of

- society, crossing culture, disciplines, professions, industrialist arts and fields as mathematics and interdisciplinary vocabulary.
2. Interdisciplinary: Between art [G] fields Where as metaphors in general inhabit all these axioms drive a wide variety and aid in associations, interdisciplinary contributions and conversations about board fields not necessary involved with a particular project but if about a project about all context including city plan, land use, institutions, culture and site selection, site planning and potent ional neighborhood and institutional involvement.
 3. Micro Discipline: Between architects all involved in making the built environment particularly on single projects in voting relevant arts, crafts, manufactures, engineers, sub-con tractors and contactors. As well as owners, users, neighbors, governments agencies, planning boards and town councils.

I. TOC: Metaphor 2009 Monographs

1. Deriving the Multidiscipline axioms from Metaphor and Thought
2. Metaphor and Cognition
3. The science supporting the stasis to architecure being an art :
4. Language of metaphors applied to multidisciplined architecture
5. Metaphor's interdisciplinary Axioms
6. Metaphoric Axioms for Micro disciplinary Architecture
7. Complex Structure: art and architecture stasis
8. Metaphor axioms of art, architecture and aesthetics

9. Aesthetic principles of metaphor, art and architecture
10. The Six Principles of Art & Architecture's Technical and Conceptual Metaphors
11. Framing the art verses architecture argument
12. Metaphoric Evidence
13. Managing the benefits and risks of architectural artificial intelligence
14. The Link Between AI and Architecture
15. Negotiate with Metaphoric Communication Tools
16. Project management's Metaphoric Axioms
17. The six principles of interior designs technical and conceptual metaphors
18. The six principles of designs technical and conceptual metaphors
- : 19. Metaphors and Architecture. published by ArchNet.org. (MIT press) Oct., 2009.