“The six principles of design’s technical and conceptual metaphors”

Based on the two stasis' to design being an art: technical and conceptual metaphors.

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Abstract:

Dividing the discipline’s metaphors between technical and conceptual has not been fully explored, nor I believe never noticed. In addition to the multidisciplinary relevance and general use of metaphors, metaphoric axioms, arguments in favor of the stasis of why design is an art the two realities (technical and conceptual) of the metaphor work separately and together in six creative ways. Many of my monographs included analyzing and explaining the syllogism:

- *Art*[A] *is the making of metaphors*
- *design is an art* [A]
- *Therefore design is the making of metaphors.*

Art [A] is only when skill is applied with intent and advanced development of some skill. Till now I did nothing to reason why art [A] neither is the making of metaphors, nor why design is an art [A]. Since 1967 I proceeded to analyze the presumptions and find its many applications. This new information in *Metaphor and Thought* by Andrew Ortony first published in 1979, provides information to support inductive reasoning and to this end each below axiom is its own warrant to the inferences of the above syllogism and the answer to questions of why metaphor is the stasis to any of the syllogism’s claims and implications.

The six principles explain the *stasis* in terms of metaphor's two *technical and conceptual* dimensions. Both are valid separately and even more acceptable in combination. But how do they two operate and how does knowing this benefit design, use and evaluation of completed works?

The *technical* is that all art [A] , including design, expresses one thing in terms of another by its inherent and distinct craft. On the one hand there is the designer who acts as the *owner's surrogate* and on the other the fountain of conceptual *metaphors* which expresses ideas as built conceptual metaphors otherwise known as design. *Techne* is actually a system of practical knowledge a*s a* craft or art informed by knowledge of control disciplines.

For example, the craft of managing a firm of designers 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. In this case the* technai *are* such activities as *drafting, specifying, managing, negotiating, programming, planning, supervising, and inspection*. By association with these *technai*, we can include *coordination, writing, and scheduling.* So much so that the study and practice of design is devoid from the humanities and downplays theories of design; developing rather the *crafts, skill and understandings needed to plan, sketch, draw, delineate, specify, write, and design.*

Contemporary design is replete with axioms, principles and theorems guiding the geometry, applications of science, use of engineering, and formal logic to produce technical metaphors and justly excluding a whole conversation about the conceptual part of the built metaphor.

Keywords:

metaphor, architecture, thought, commonality, commonplace, dubbing, cognitive, knowing, stasis, art [A], linguistic analogy, equilibrium, equipoise, topoi, top-down, frame conflict, appreciate, conduit, parte, design system, modified culture, mapping, structure, domain, signs, apparatus, spaces, volumes, shapes, forms, metaphorical mappings, invariance principle, alive, dead, onomatopeics, surrogates, appetite, desire, mind, indirect use, direct use, vision, gestalt, formulae, grand design, psychological, processes, metaphor comprehension, memory, mnemonics, encoding, mapping, categorizing, inference, assimilation, accommodation, attribution, inferential import, structured programming, stability, referential specificity, general acceptance of terms, vividness thesis, difference, identity, comparison sensible, communications, technical, techne, conceptual, interdisciplinary, multidiscipline, discipline

Introductory basis for the reader to understand the relevance or significance of this topic, or to understand why they are reading about it.

The scholar will find why design, architecture and engineering are an art [A], the definition and relationship between the technical and conceptual metaphor and the practitioner the metaphoric causes of design. The relevance to scholars is to continue

their research into metaphors and design and practitioners to abridge already tried and proven principle and axioms with metaphors.

The significance will widen and expand the scope and field of information and pre-programming and programming as well as the planning and design to incorporate seemingly irrelevant and peripheral extent factors into the design process. Reading about the six principles will provide clear ways of applying theory to *practice. This study not only defines why design is an art but shows that definition to be the cause of design and when developed better quality design. To have an inmpact on desing I have simplifes many of the metaphoric research ito axioms and applied the axioms to usefull principles.

Axioms definitions:

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

[4] Metaphorical language (products) is a surface manifestation of conceptual (program, design and contact documents) metaphor. The product metaphor is the residue,

excrement, and periphery of the deep and complex reality of the product's creative process and extent reality.

As we don't know the inner workings of our car and yet are able to drive so we can use other design products. 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 product.

Axioms:

Axiom I. Since metaphor **[B]** is the main mechanism through which we comprehend abstract concepts and perform abstract reasoning: [1] what is built is first thought and conceived separately from the *design work, as thinking and conceiving is separate from the outward expression, so metaphor is a process; and, interior design metaphor is a process, and what we see is what the process issues; not the manifest metaphor. If the metaphor were to manifest it would be a series of interacting feelings about thoughts, words, impulses and decisions.

Axiom VII. the metaphor-building **[B]** clarifies our place, status and value. As metaphor is the main mechanism through which we comprehend abstract concepts and perform abstract reasoning so products inform our social, psychological and political condition.

Designers and other arts as well as users and connoisseurs can find sufficient satisfaction with only the aesthetics of the technical before ever considering the conceptual metaphor.

The product, song, ballet, painting, poem has an intrinsic beauty satisfying the five senses leaving thought and concepts for a later time. For example today we can relish in the great royal residences of France leaving aside the sociopolitical concepts they expressed. Voices in harmony to soft music are a background as may be a cityscape of buildings designed in harmony with one another; both being perceived as technical and not conceptually.

On the other hand, after my studies at Columbia and arriving in Rome I ran to see my conceptual metaphor of St. Peters; the form and its dazzling scale only later came into focus. The same can be said for my first visit to Rome's coliseum, Spain's bull fight arenas, Bloir Valley palaces, English castles where I first saw the concept and later reiterated the details and architectural orders.

Conceptual metaphors are exemplified by a game where you name a string of common characteristics and the challenger then may answer: "things that are on animals, in buildings", etc. In other words people can identify the metaphor once given a set of common characteristics. What has windows, doors, is in Manhattan, symbol of New York and houses office workers: "the Empire State building". The challenger makes a metaphor between the words and association best suited to those words. When naming the thing and its referents the challenger is correct. Neither the referent image nor the correct answer is the metaphor. The metaphor is the process of making the association between the words and something stored in the mind. Whether automated, instinctive,

educated, licensed, indigenous or cultural the fact remains that a bridge that transfers one from another permeates al forms of thought. In fact the artifact that we see is a remnant of the technical and conceptual metaphoric processes.

To say that art is a metaphor and then that design too must be a metaphor assumes that the art is the manifest work and not what it represents. Early classic music in the age of Mozart known as the Rocco period was a music of technique; it wasn't until Tchaikovsky, symphonies and the romantics that conceptual metaphor in music was born, yet there was technical metaphors in Mozart's music.

One 93 year old lady friend once remarked that she knew when she remembered some thing that came to mind but where was that thing stored. She even could accept the associations that brought the recollection; but where was it until then. That was a question which remained unanswered till she departed.

Let us leave all of that to other monographs but now concentrate on the wonderful coincidence of these two different characteristics of the metaphor occurring simultaneously, and separately. What's happening? To explain this operation we refer to the axioms of metaphors of design and presume the workings of the conduit.

Axiom II [B] [2] *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.

Six principles are at work.

Explained by applying axioms (shown in Roman numerals)

Predicate to six principles at work:

Axiom III. [B] *Commonalities are the keys to mapping across conceptual domains; s*ifting through the program the designer seeks the "commonality" between the reality and experience to make the metaphor. *Mapping* is only possible when designer 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 designer's design agenda and the user's requirements find both their commonalities and differences.

As the designer structures the program, design and specifications the designer simultaneously structures the metaphor of the design . Design 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".*

Designers translate their design 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 elements (doors, wheels, graphics,windows, stairs, etc).[1] 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] 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] Aside from articulating a program designers 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 models, plans, sections and elevations which are then translated in to fabrication documents.

Later the contractors and suppliers 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 fabrication 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 completion.

Six Principles at Work:

First: Inform one another

The two inform each other; that is the technical and conceptual learn from each other. That is the aspects of the craft, building technology, shape and form, geometry, strength of material, and dimensions bridge, carry-over to ideas about people, places, events, social status, scale, significance and moods. Contrarily ideas of pomp, pageant, royalty translate into techniques producing large scale, great height, decorations, symbols, etc. [2]*Conduit of City-wide metaphor*: Furthermore, the reader is able to "appreciate" (to attach importance to a thing because of its worth) the street, its geometry, limits and linearity as an idea on the [2] conduit from the interior designer, through the metaphor and to the reader. In formulating the design program with all its general and specific dimensions the designer summons technical knowledge conditioning the clients stated requirements to determine site selection, budget, building program, financing, construction applicable government regulations traffic, transportation and utility availabilities. At this stage both the technical and conceptual of each metaphor of each must be articulated, valued and their implications to each other determined. Financial

access, value and importance must be determined both by itself as what Weiss calls a [C]“*emphatic against the sky”*.

How will the financing affect the budget and the budget affect achieving the program’s goal. The admixture of financial, budget and business planning all inform one another as well as the other technical and conceptual process.

At work is technical knowledge and abilities in banking, book keeping, estimating, budgeting, construction contact cash flows, etc. All of these to establish the very money available to program, plan and design. Yet establishing the cost relative to the type of project, location, and context tests the interaction of concept to technique and proving just one of the conditions of the program as well as the value of the ideal and the extent to which operational and building goals can be achieved. The technical metaphor contains conceptual metaphors and their combination informs the conceptual metaphors of the each subsequent metaphor and their sub-metaphors. Each is bridge, each expresses one thing in terms of the other and each expresses itself in terms of another. An estimated bill of quantities will be expressed as a budget, a bank loan as a draw schedule, etc.

Second: <u>Prioritizing where one comes before the other.</u>

[3] “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 (product) 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 IV. [B] Design shapes the culture. Design shapes and forms tend to reflect common geometry; product types tend to share common properties; 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. [4]"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. I. *Parte, model and concept:* After assimilating the program in the process of making a habitable conceptual metaphor, the very first step in the design process is to develop a "*parte*' as [B] (presumptive) *resolutions* of the argument.

It is a "top-down" approach later followed by designs which meet the *parte*. Alternatively, the *parte* may follow the design process and be presented to defend the design.

The [5] *generative metaphor* is "carrying –over" perspectives from one domain of experience to another where you build one thing in terms of another where the other is the model, and, what you build is the application, the model being 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 product configuration. Once achieved the "*parte"* (concept/gestalt) manifests and can be articulated.
"Form follows function" is such an order of priority where design first organizes the operations of the program prior to shaping the product. It also implies that the ultimate form will somehow reflect the operations and function of the product.

Third: Sequencing where the first dominates the second.

Just the evolution of a design, deciding on what to build, where, how and then assembling the team each affects the other. Project managers schedule process which may continue in parallel with *others while others are critical to the overall and the next step occurring.

Making an design metaphor without an agreed program can be both expensive, disappointing and result in a metaphor which is neither compatible to the metaphoric expectation of the users, within the limits of the finance and a nightmare to the fabricator. To one degree or another is the subject of why there are so many "change orders" during the course of the design and cfarication process because the first metaphor was incomplete, not comprehensive and not coordinated. The affect of the first on the second is pronounced. Where as a well conceived and approved program including all the technical and conceptual metaphors will only lead to the perfect start of a controlled design process. A process which begins with a parte, schematic, preliminary and then final design. The technical metaphor of the allocation of spaces, building materials, and building systems all was being coordinated with the cost of construction and building schedules. Metaphorically the value of the design meeting the budget is dominates the conceptual as a parameter to manifest the metaphor as a building.

A design which begins with line drawing allocation, organizing functions as well as sketches of the possible building configuration, once agreed can be overlaid and developed into more detailed technical ideas and conceptualizations of the metaphor until the architects and the owners agree on one acceptable metaphor.

[6] “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 , rather that to map isolated predicates. The systematicity principle reflects a tacit preference for coherence and inferential power in interpreting analogy”.

[6]“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 V. [B] Metaphor is a mental image. [1] Metaphor m*aps the structure of one domain onto the structure of another”*. [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.

Forth: Interactive Chain where the technical begets the conceptual begets the technical and so forth.

[1] 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.

[A] Design as a surrogate is accepted at face value. As a surrogate (a design) is "a replacement that is used as a means for transmitting benefits from a context in which its' user may not be a part", design's metaphor bridge from the program, designs and fabricators to a product and trusted tool. It works.

[A] "It makes sense, therefore, to speak of :

a. 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".

b. "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

c. *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.

d. *Metaphors are accepted at face value and design is accepted at face value.* Accustomed to surrogates design is made by assuming these connections are real and have benefit. Until they are fabricated and used we trust that they will benefit the end user. Assembling the product 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.

e. *Like a linguistic, the building stands, like a great, stone dagger, [A] emphatic against the sky*. The stair, the exit, the space calls, gives emphasis and is strongly expressive.

Fifth: Triangulation where the technical and the conceptual combine and form a single cognition containing the characteristics of both technical and conceptual.

[7]Metaphor is in the mind: So while *design is the making of metaphors* and *designers 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 one designs one's own house, decorates one's own room there will likely be that commonality. If an designer is selected from a particular context 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.

[7] Designers 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*.

Designers 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. Sport cars are different from sedans and casual closths are diffenrt from evening gowns.

Sixth: Co-mingling of vocabulary between technical and conceptual

Stratification and leveling where either the conceptual or the technical characteristics simultaneously exist on separate levels.

A. Diagonal association may occur between conceptual and technical on different levels as a technical on one level finding commonality with conceptual on another level.

[8]" A metaphor involves a nonliteral use of language". The building design and the program cannot be a perfect mapping. A non-literal use of language means that what is said is to have an affect and but may not be specific. *At each moment in its use the metaphor may mean different things, least of which may be any intended by its authors.*

Axiom VI. Elegant design metaphors are those in which the big idea and the smallest of details echo and reinforce one another. Contemporary designers 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 designer'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.

[7] P*eople ascertain the deep metaphor that underlies one or more surface metaphors by filling in terms of an implicit analogy*". A unique product 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.

[7] We see the design 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 interior design metaphor only speaks through its apparent shape, form, volume, space, material, color, etc that the concepts which underlie each are known to the user as they would to a painting, poem, or concerto.

[7] Design 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 ergonometric. Furthermore, as observation, analysis and use *fill in the gaps* users inference the locations of concealed parts, connectors and connectors; 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 beatiful, 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. In any country we can drive most cars and find wash rooms in most public buildings.

[9] A *"problem of the metaphor concerns the relations between the means of expression and design meaning, on the one hand, and designer's meaning or sketch 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".*

[9] What are the *principles which relate fabricated design meaning to metaphorical design meaning" where one is comprehensive, complete and coordinated while the other is merely an incomplete scanty indication of a non specific.*

[9] 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. Building owners are asked to translate a two dimensional set of drawings ass fulfilling their design requirements to what might eventually be built.

Post script

In another time when kingdoms created their dynasty's iconic buildings, the designer and artisans took their ques from the reigning monarch. In our modern pluralistic society the free reign of ideas and opinions as to contexts and their meanings are diverse. As the doctor takes the Hippocratic oath, the lawyer vows to defend all so designers capture the ethos ([1] The Oxford English Dictionary, is defined as "the characteristic spirit, prevalent tone of sentiment, of a people or community") of the time into fabricated metaphors.

Not only is my childhood quest relevant but the essence of the responsibility of today's designer who not only reasons the technical but individually reasons the conceptual. It is to the designer that society turns to be informed about the shape and form of the context in which life will be played. With this charge the need *to know that we know* and do by reasoning what science verifies by the scientific method to *know that we know* about the products, artifacts, buildings, parks, and places we set into the environment.

It is a public and private charge to prove the relevant, meaningful and beneficial metaphors that edify encourage and equip society as well as provide for its' health, safety and welfare. So it is critical to realize, control and accept as commonplace that the role of the designer is to do much more than design but *design masterfully*.

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[8] *Interpretation of novel metaphors by Bruce Fraser*

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Section on "Metaphor and Representation":

Footnotes:

[A] *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.

[B] Axiom Roman Numeral references: *Metaphor's Architectural Axioms* monograph by Barie Fez-Barringten

[C] "Surrogates," published by Indiana University Press. By Paul Weiss

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***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 axioms are b**etween fields of art **[A]** whereas 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**[A]**, crafts, manufactures, engineers, sub-con tractors and contactors. As well as owners, users, neighbors, governments agencies, planning boards and town councils.

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Barie Fez-Barringten; Associate professor Global University

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