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REALITY AND METAPHOR AT THE CORE OF ARCHITECTURE

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Abstract: Architecture has crossed with mathematics via a doubled-faced and intricate manifold, where reality and myth have met continuously. We may regard as metaphors ideas such as the canons of antiquity and their relationship to the cosmos and human body, but the geometrico-mathematical framework was intended to be a precise description rather than metaphor.
In the search for a cosmologic order, metaphor appears as a path to fallacy rather than a way to apodictic knowledge that a mathematical order can provide. This way of thinking has proved to be remarkably influential through the whole of history since Greek philosophers questioned the geometric-mathematical order of the universe.
From that time on two different questions arose. Is there an actual geometric order, or rather, are we simply constructing a rational framework to understand reality as it is. Pythagoreans took the first idea to an extreme as they believed that everything is number. Others seemed to rely on the idea of a framework that establishes relations between numbers, where the numbers represent things. Therefore, it is a constructed thing that, nonetheless must match our experience of the visual world and cosmos as 'It Is'.
At the core of ambiguity, architecture, or rather, architectural theoreticians and architects, play a double game when looking for some rational framework in which to ground architecture. However, mathematics cannot be confined to a visual display that architects may feel is attractive and Architecture cannot be confined to Mathematics.
Mathematics uses symbols but metaphor is not its realm. Mathematics does not need metaphors to describe things as they are. Furthermore, Mathematics must not need metaphor. But Mathematics has shown to be extremely effective in describing immutable geometric properties of two- and three-dimensional spaces which are accessible visually to some extent.
Metaphor, however, is not a free chaotic entity to provide meaning for it also needs some rational reference and thus can metaphor actually meet mathematics at the core of Architecture?

Keywords: Geometrico-mathematization; Phenomenology; Structuralism; Zero; Infinity; Fujimoto; Descartes.

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> *"I have argued that experience cannot be the sole object of acquaintance since it is not the case that in every perceptual situation we are aware of it. If this argument is accepted it can be reinforced – if not replaced – by considering what is meant by saying that experience alone is the object of acquaintance. I shall first consider the view that this is so because only of experience can we have certain knowledge."* (NAGEL-BRANDT 1965: 461). Anthony M. Quinton: The Problem of Perception

Dawn of humankind moved civilization into a never-ending process by which man has transformed himself and his environment to live in. A journey to understand himself and the cosmos started then. And yet individuals have not been acquainted with zero nor with infinity by sense experience and for millennia humans simply felt no need for such abstract entities. However, moving on, somewhere there between zero and infinity man and civilization have lived and felt alive (SEIFE 2000: 12-53). What a simple complexity!

The problem of recording mathematical experience might be that we need visualization of processes, an engraving, a drawing, or an object that displays some regularity or rule that a geometric or algebraic formula can read and thus give us a better image from that gathered from direct perception. Otherwise, we may always claim from the outset that we live in a mathematical world since it has existed as such because basic laws such as the laws of two-dimensional and three-dimensional space are unbreakable, and they determine motion among individuals and the place of things. There is certainly a regularity in the Great Pyramid of Giza that we may not find in the primitive mammoth-bone dwellings on the Russian plain built 15,000 years ago that, nonetheless, already display a strong sense of recognizing regularity in the three-dimensional space of objects and the ability to recreate them into a shelter (GLADKIH-KORNIETZ-SOFFER 1984).

However, regularity in the Great Pyramid seems closer to that of the Parthenon and other Greek or Roman temples than to that which Borromini uses in San Carlo alle Quatro Fontane because he created his "arbitrary" order to pursue the plastic effect he was looking for. At the age of Pascal and Newton (GIDEON 1995: 107-109), architecture seems to have gone through a process of releasing itself from a clear Euclidean space and yet a curious mark of Newton's laws is the fact that they are based in straight lines along which gravity acts and geometry makes that process clearer. Nonetheless, Borromini encounters the key point of all architectural discourse which is the order as metaphor for the human body and thus he simply invents his outrageous orders (SUMMERSON 1998: 13).Thus, metaphor and mathematical formulae challenge each other when looking for architectural description that should embody a true understanding of cosmos. The problem seems to be that mathematics is

broader than architecture and, vice versa, architecture seems to be broader than mathematics. Thus, we may not confine one to the other, otherwise, we would assume strong restrictions on both in a way that even mathematics and physics do not confine to each other.

The feeling of having an advanced human development implies a representation of the world-outside-the-world-outside-us and an answer by which that representation returns to that world and to us. That representation is as advanced as an abstract character is displayed. Nonetheless, there are many representations of an abstract character to be found through life of civilization. A simple stone left buried next to a body implies that the object-stone became more than a stone in the wild to be found in nature because someone has given it a symbolism even if it would be impossible to find what it was. A basic thing as a word, a sound-image, is a representation but it also is much more than a representation of its own due to its potentialities (SAUSSURE 1998). But by assuming that there are potentialities we are entering the realm of creation and imagination. We can imagine and therefore we can create things – we may say!

But, if one asserts that representation of world-outside-the-world-outside-us is a valid statement, then, the invention of zero and infinity makes mathematics a foundation stone of civilization to be found, not only in architecture, but anywhere in human life and certainly at different stages of development and need. Perhaps 'foundation' is too radical since mathematical thought cannot be reduced to zero and infinity alone and we should accept that human civilizations have prospered long before zero or infinity met them.

Thus, we may better think about landmarks in history of civilization rather as the birth of civilization. Furthermore, the sense of zero and infinity already presuppose a former advanced acquaintance with the world we experience, into a large rational extent where we can see things and combine things. Besides, it is arguable that zero came first and infinity later. Since Greeks had representations of the world that assumed the cosmos to be a bounded thing of solid and void. Discussion on the 23rd definition of Euclid's Elements (parallel straight lines) could lead us to assume that there was not much of infinity there but simply, the huge. To link that definition to infinity requires another level of abstraction even by asserting that Euclid's contribution to infinity was great in that way.

Phenomenologists would probably say that a world-outside-the-world-outside-us has to be, at least, a world-outside-the-world-to-us-inside-us otherwise it would seem hard to give representation any meaning. However, to allow the whole process of acquaintance to work properly, it seems helpful to have some type of "neutral" code where representation can be simultaneously free, rational, and prepared to embody meaning of some kind and, perhaps, not of any kind. Regarding the history of man and civilization, mathematics appears to be that perfect code to work upon secure knowledge. As Salomon Bochner

puts it, *"What makes mathematics so effective when it enters science is a mystery of mysteries"* (BOCHNER 1981: v).

Probably, Dufrenne-Husserl-Merleau-Ponty would have preferred to say that the eidetic reduction is far deeper than a geometrico-mathematical framework as it brings together intricately, subject and object in a way that I and the thing-outside-me is a thing-inside-me, too. Otherwise, I could not be acquainted with its ontological authenticity as a thing-in-the-world that, nonetheless, was there before me and at that former time did not exist for me till the moment in which it became a thing-in-the-world-to-myself (DUFRENNE 1973, HUSSERL 1999, MERLEAU-PONTY 1996). [1] Furthermore, from its outset it is assumed that a geometrico-mathematical framework is opaque to what an object really is and therefore to what I really am because of the reciprocal infusion subject-object. And I cannot displace that partial construction embodied by the geometric-mathematization that loosens both myself and the object in a way that cannot ever be overcome by myself.

Describing things such as they are given by perception came to be the central background of the eidetic exploration of things as they actually are in the deepest ontological sense we can imagine. In fact, things as such certainly have an existence beyond myself and my imagination. And in this way, we should look comfortably at moving away from the standing rituals of epistemology where we control an environment inside an environment such as where the steel sphere and the feather fall at the same speed in a vacuum.

Curiously, this experiment seems to work properly in both epistemological and phenomenological grounds because I can experience and understand both sphere-feather either at the experimental basis of a laboratory or at the outer world where both fall at different speeds. That is, in both cases we have acquaintance through the mind-body-world phenomenon. Thus, I ground the scientific experiment as such and I also ground the phenomenon of perception as assumed by phenomenologists. Yet, I may not claim that I found the pathway that takes me from perception to reflection because I simply have two different realities put together where the mind-body-world relationship seems to work properly. However, there should be, in fact, a connection between perception and reflection because I became acquainted with a phenomenon in nature and, then, I took it to a laboratory which seems to be non-natural, say artificial. But, in cosmological terms this artificiality of a non-natural world appears to be just as a piece of a natural world taken from a place beyond Earth's atmosphere and

[1] This is an ambitious cross reference through Husserl's Krisis (The Crisis of European Sciences and Transcendental Phenomenology), Merleau-Ponty's Phenomenology of Perception and Mikel Dufrene's Phenomenology of the Aesthetic Experience. It includes mutandis mutatis the ontological nature of the art object versus aesthetic object that is generalised into the world of any thing.

bringing it into a small room. In fact, what is natural and artificial is questionable because inside the universe all that happens necessarily obeys according to its order and to its basic and fundamental laws. Sphere-feather is a play out-side-us-to-us whose validity is given by the large-scale of the cosmos that we live in.

The sense of artificiality is an abstract creation of individuals and at its core this basically means that man acted in a given environment, recognized its order, its working forces and could take them out to preform another role that, apparently, they would not. Artificial object is the man-made thing, a man-controlled phenomenon. Thus, the creation of a world-out-of-the-world and a return to it, is more basic and fundamental than it seems a priori. And by accepting this idea, we can also think of the invention of zero and infinity do not share such sense of artificiality to some extent.

If we assert that zero and infinity are artificial creations whose access is given by a system of tools that we have created, and that have not arisen directly by perception, then, we may not avoid a certain artificial character that embodies them as man-made things. Furthermore, we can even ask to what extent we are actually acquainted with them. Logical compatibility and the problem of a visual notation had major importance on the appearance of zero in Babylonia (SEIFE 2000: 12-19). But visual notation is already a man-made thing.

Merleau-Ponty and Moore would disagree on human metaphysical infinity and thus, probably the former would have accepted a full engagement with infinity and thus acceptance of the eidetic reduction regarding infinity (MERLEAU-PONTY 1960: 179-187; MOORE 1990: 218-233). However, by refusing metaphysical infinity Moore centres the argument on finitude of human life. Thus, using a Moore based argument we can question how far infinity is actually understood, or has been acquainted with. Say, that by enlarging the Hubble telescope eye, we may be finding galaxy after galaxy, but Hubble only records objects at finite distances, no matter the huge distance they are from Earth. In this context, infinity and the unknown mix intricately and both share incommensurability and yet the latter is not necessarily synonymous of infinity.

By giving an image-out-of-an-image-with-no-image, mathematical formulae seem to be able to live, that is, to exist beyond human perception and yet to be able to return a meaning to perception when perception seems exhausted by its own means. If, by one hand, boundaries of mathematical formulae are easily settled at the core of a scientific explanation of a given phenomenon, by another hand, mathematics seems to display other capabilities whose boundaries are not known.

Creation of the artificial can be a way of inquiring into the problematics of description and of language. A Saussurean based argument might introduce a sense of artificiality insofar as a sign would represent a sound and an object. Regarding sound production as biologic evolution alone, at least, we would have

the imagistic sign as a creation in the world-outside-us-to-us. Language has also to comprise a combined awareness of self and of the other, communication would be apart from both. And yet we may leave open an argument by which sound-language is an invention and thus, successive production of new sounds led to language development and thus communication was systematically improved. And thus, we could read languages through a sense of artificiality, too.

As the acquisition of a language could allow humankind to communicate beyond the realm of a single individual, from its outset, mathematics could perform logic operations concerning human understanding just as any other tool could and thus mathematics proceeded through its own evolution. The fact seems to be that mathematics not only can describe phenomena to some extent but also in particular, makes clear phenomena of creation though human nature and civilization.

Then, mathematics seems to be the realm of reflection, not of perception, because it is based on a system of pure codification that is not given directly through perception. And when I enter the outer material world under any kind of formulae, I immediately find that those formulae are not alone because they have become a built thing into the material world of the objects. This is not a fact as such because it is what the real world exists besides as the mathematical world is, but also because there is a cultural construction that makes this phenomenon work like this. Since the Greeks mathematical formulae are the territory and they inquire of the hidden world of origo rerum and therefore, only geometrico-mathematizable things are liable. Natura naturata is confined to this characteristic (TATARKIEWICZ 1989: 293).

There seems to be a problem in the crossroads of perception and reflection which is description itself. Falling apart from a geometrico-mathematical description may not solve the problem of the thing as it is granted by the eidetic reduction. Working from a phenomenological basis, I must not accept any kind of geometric-mathematical framework otherwise I would feel myself falling into the whole problematic informed by Husserl's Krisis. I must avoid mathematics whatever the shape that mathematics can provide to rational frameworks. Nonetheless, we can then argue that, as far as perception is the starting point of reflection, perception must not deny mathematics of the pathway towards reflection to inform in whole, the possible stages of acquaintance. The problem, then, is to put forward a way in which phenomenological environment seems to be able to bring everything in. It seems hard to accept that such environment has given a flexible and comprehensive framework to take us out through the whole variety of phenomena that we are able to be acquainted with from perception to reflection and, also, to locate our awareness of the thing as it is given by a unique eidetic reduction that sets both a unique fact in the world of phenomena and an intrinsically interconnected phenomenon.

To state that perception and reflection do not oppose seems to create a particularly serious problem that Anthony M. Quinton has certainly identified as a working problem in the realm of science. And an interesting way of formulating the problem is to assert that in perception we are only acquainted with "certain" knowledge and thus we are not limited to the realm of experience. Bertrand Russel seems to have found a way of understanding this phenomenon too (RUSSEL 1998: 154). According to this approach, knowledge has to start on knowing something but proceeds to reflection into a realm where I can create entities of a more abstract character that are not given by perception nor do they exist in the world I perceive. However, what we can extract from that process is that there is some "exclusive" type of knowledge in those abstractions and as such they will combine with other kinds of knowledge including that knowledge that is given directly by perception. We may say that we have invented those abstractions in the process of acquaintance because we found them useful. But, are they so rooted in perception or are they product of a fertile imagination?

But this seems not to be enough. What is a description of an object given by experience? Can language clarify perception or, rather, undermine it at the core of the eidetic reduction to some extent? Description implies a tool of some kind, it can be verbal, a written language, a drawing, or any other means. But by accepting such bias, we come to a point where we may accept that eidetic reduction must be free of any description otherwise it would need some kind of geometrico-mathematization, a tool beyond the object, that which would by necessity be biased, too. To be acquainted with the world does not mean to mirror it and reflect its image back to its source. But, then, by a certain language as a means of description it does not seem a good idea to leave aside mathematical forms of knowledge that can display access to objects that other means cannot.

The problem seems to arise from the fact that any language and therefore any description can bias a described object and, thus, there is some degree of opacity when I get so close to an object by means of description. However, it is most likely that Merleau-Ponty would not agree with this argument because description must always ground perception-of-something as a fact, as a real phenomenon that engages subject and object.

Considering such bias problem to be true, then, what Husserl's Krisis means is weakened even when we agree of the characteristic abstraction given by a geometrico-mathematized image in opposition to many perceived things that I cannot geometrico-mathematize. That is, either any eidetic reduction can never be achieved or, rather, can never be acquainted with. In the end, both mean that they can never happen because I am always away of such acme of acquaintance. Yet, the general problematics of crises in sciences seem to be valid in Krisis and thus there seems to be other kinds of knowledge. Where knowledge can be apodictic and entirely reified into a complete and bold unity that may not

necessarily emanate from the eidetic reduction otherwise apodictic knowledge would be declared to be impossible.

There is a particular importance of mathematics to be found here. Mathematical formulae may be clearer because, at least, I can bind them in their explanation and meaning and thus they would better ground the way to any apodictic knowledge. And I certainly have in mind mathematics as a code or a system of codes either geometric, or algebraic, or both, such as in the idea of the variable and function. Thus, regarding Husserl's Krisis, a crucial aspect seems to be that I can be aware of my own acquaintance and to construct it in a more effective way when I know what formulae are, and what they embody and what I can be acquainted with beyond and former to those formulae.

Eidetic reduction as both a basic and final statement to apodictic knowledge seems not to be a solved problem. As an object is given to perception, I will be acquainted with it and a far more complex knowledge operation is started. What can life of an object be in-me-to-myself?

Only my imagination can actually extend life, or content, of an object and thus to find some kind of transcendence in that object due to my active interference. But, if we accept this to be so, suddenly, we seem to enter a universe where there was no object before I became acquainted with it, that is to say, a zero to my perception and thus to my existence. Then, by perceiving that object, it seems reliable to take it as a basic material unit from where all else emanates. Yet, concerning potential meanings we seem to enter the realm of the unknown infinity.

I may see Eta Carinae by the Southern Cross as a wonderful double flower of the universe and Australian Aboriginal people as a dot among dots of the magnificent celestial emu territory of a great dreamtime story. In this sense, material objects are not confined to themselves as material things but, then, we can also ask if the roots of nothingness and infinity – the most weird logical constructions of mathematics and thus of human kind – are simply symbols of that human stream of time that is able to construct knowledge beyond itself. We may call this phenomenon imagination, but it seems more like an overwhelming phenomenon where perception, rationality, experimentation and imagination are one.

Somewhere there certainly are levels of subjectivity, but, somehow, knowledge seems to need some stabilization, some common agreement. Relativity and subjectivity work somewhere there but it is arguable that we only accept them because there is some permanence in them and thus, they are repeatable as a cycling phenomenon. Besides and probably much more important, we must be able to work with knowledge that is not stabilised yet, that has not been brought to a common universal agreement.

In this context, when we have a description of an object given by a language whose boundaries of meaning are not so clear as those embodied by mathematics, we seem to face a double manifold of mathematics as a strong apodictic structure

that architecture could not let fall apart. Nonetheless, we may not forget that formulae can only give partial descriptions when they seek a universal explanation.

Mathematical formulae play a weird rule in architecture when they are reduced to scientific bases. There seems to be something critical. A basic outline of Anthony M. Quinton's views takes us into the formulation of proper questions to scientific enquiry and to the patterns of scientific explanation and this seems to have an echo in Marguerite Neveux's approach to the golden section as being simply a myth (NEVEAUX 1995: 137-138/140). As she puts it, science poses the question and myth gives the answer. Yet, algorithms in contemporary architecture may be understood as strong myths, too. That is, strong myths when and if architecture looks for a scientific background apart from being construction, within the realm of physics and materiality.

This problem seems to be particularly critical when we approach architecture. We know and we are able to identify proportion systems in architecture as well as forms and shapes given by algorithms. And this fact means that we have strongly crashed into the mathematical realm. Thus, how can we accept an eidetic reduction in which geometrico-mathematization does not play a major role? The case seems to be serious because algorithms and similar approaches have become so attractive that we can never find an eidetic reduction substantive if at the act of perception, we have not found some intuitive way of dealing with the way to mathematical formulae.

Much of the problem starts and ends with the role of the visual in acquaintance and architecture gives material-image to things. Yet, Gombrich has put forward the problem of the visual image in the most problematic way in his famous article first published in Scientific American, in 1972. It would be interesting to think that what we may be sure about the girl dancing (in the cartoon) is simply that her body must obey those laws of physics and biology. And, at least, the laws of physics have a mathematical framework to validate them.

At this stage, we may say that mathematics does not give meaning to things, but, at least, it is able to organize knowledge with regard to our knowledge of things. Thus, mathematics seems to be a working tool to be used in science and, perhaps, in every field I would like to have it. Checkers and chess are mathematical games ruled by the properties of two-dimensional space in which I define a set of rules of my own. But the properties of the two-dimensional space are unbreakable and actually make both games possible.

In this sense, there was an understanding of the world as it is, but also of the world as representation based in basic properties that I could work out separately of that world and thus I created something distinct as games that did not exist in that former world.

Then, the problem seems to be what can a "neutral" code be and, secondly, if we are actually able to critique it. Nonetheless, we may agree that such a code

has to be a creation, a human creation and thus imagination has to partake that experience of creation to some extent. Geometry is certainly one of those codes, but those codes must not be confined to geometry. As far as a code is created to provide some support to organise something else, we may admit that many, perhaps, even an infinity of codes is possible.

However, such positive statements may only be accepted if one pays attention to the degree of abstraction that is involved. Since the dawn of geometry, it seemed reliable because it could be seen as an accurate world image making, a perfect representation of what is actually seen and felt. 'Perfect' geometry may be found in crystals and shells, but also in living beings. There are, at least, two basic ideas of this basic geometry that ground much of our knowledge. The first one is related to two-dimensional and three-dimensional regularity and the second is related to resemblance and repletion and both are important to rational frameworks.

The first idea comes straight from the properties of the two-dimensional and three-dimensional worlds when they are challenged to be filled in by a single regular form. And physical properties of these spaces only allow an impressively small number of shapes even when we combine two, or three regular forms. The second idea represents a capability to see and to organize the world. Same species of animals or plants have similar features, or an evolution of similar features from a base. We can recognize a little lion as a future lion and distinguish it from a zebra or a crocodile. Thus, we organise forms in a way that is rational and effective.

Architecture has crossed with mathematics via a doubled-faced and intricate manifold, where reality and myth have met continuously. Mathematics is magic. It is a code – or a system of codes – whose compounded entities, constants or variables, can support a large spectrum of applications that describe phenomena. This characteristic makes mathematics a fully versatile tool in numerous scientific areas and, in general, when we look for certainty, we look for a mathematical framework that gives us a characteristic description.

Thinking that our consciousness of mathematics already is directed to some form of mathematic expression should not mean that we have already entered the visual world of shapes and forms except to the fact that function has a geometrico-mathematical framework. This became a mathematical fact after Descartes. We may stress how Enlightenment produced a united form of mathematics that overtook former regional mathematics that had developed separately in different cultures and time. And, how the visual representation of functions and of the imaginary unity 'i' gave strength to further developments of mathematics and for our contemporary perception of what mathematics is and how it can be used.

It might be difficult to evaluate what came first, arithmetic or geometry. The latter might be understood as an obvious invention after the two- and three-

dimensional spaces. Ancient inscriptions such as single circles, or multiple concentric circles, are work made in two-dimensional spaces. But the fact that we assume that they are countable might not be consensus.

We may regard as metaphors ideas such as the canons of antiquity and their relationship to the cosmos and human body, but the geometrico-mathematical framework was intended to be a precise description rather than metaphor. In the search for a cosmologic order, metaphor appears as a path to fallacy rather than a way to apodictic knowledge that a mathematical order can provide. This way of thinking has proved to be remarkably influential through the whole of history since Greek philosophers questioned the geometrico-mathematical order of the universe.

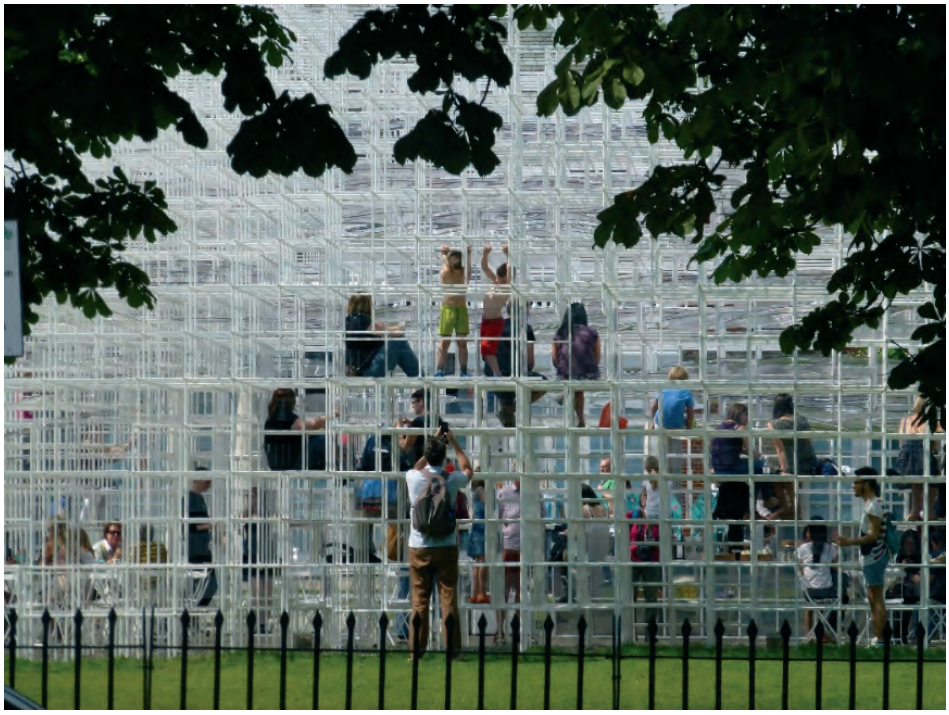


Figure 1. Sou Fujimoto. Serpentine Gallery Pavilion, 2013.

Metaphor, however, is not a free chaotic entity to provide meaning for it also needs some rational reference and thus, can metaphor actually meet mathematics at the core of Architecture? Metaphor uses a double manifold of apodictic knowledge and subjective knowledge appreciation. Metaphor is a representation that combines representations, but at least one of those representations has to have a stable meaning given by a consensus. Then, if power seems to be to create

images beyond images, it is the territory of imagination par excellence. What is somehow surprising is that it then describes a given object, or phenomenon, in a way that other rational frameworks do. However, by its structure, metaphor is particularly rational to a large extent because it extends like former given meanings to an extreme. Perhaps, metaphor meets infinity somewhere on the way to give ground to poetry.

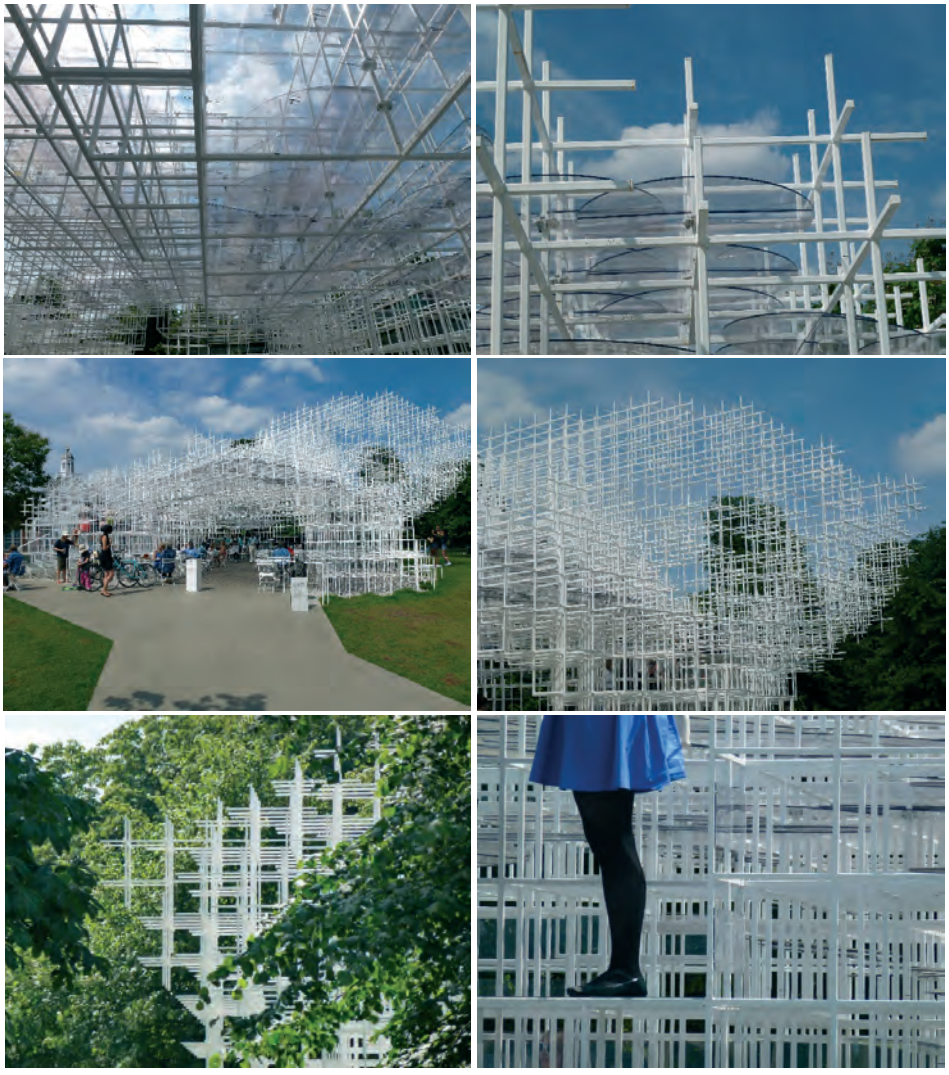
Mathematics is not the realm of metaphor and yet we may think about something equivalent to what metaphor is to language and this is the realm of applied mathematics. Applied mathematics implies two different aspects, or the coincidence of two different approaches. The first concerns mathematical body to the extent that is a whole coherent set of proper codifications, a game with its own unbreakable rules. The second concerns the way how this body of knowledge is transformed into a significant adherence beyond what mathematics is in terms of the abstract. We may claim that this is an artificial account insofar as basic systems such as counting seem to be an intrinsic connection to the real world of phenomena from its outset.

The problem seems to be that objective description of the thing such as it is can be a standing point of mathematical formulae, but not necessarily its only end. Applied mathematics would make us work in a sprightful way regarding an end. But mathematical conception may accept collage especially when it would be as clear as a code, or, at least, when it behaves like that. A grid might be one of those codes, perhaps a very simple one but its consequences may not be simple in terms of complexity and especially of a given symbolic value.


Figures 2-3. Sou Fujimoto. Serpentine Gallery Pavilion, 2013.

An architectural example may make this problem clear. Sou Fujimoto at the Serpentine Gallery Pavilion entered both the realm of nature, the close distance to be reached by walking and touch, but also nature where land and sky is immense, or can be immense. His computer visualization prior to construction

appeals to these poetics and they came to be true experiences after being built. Yet, there was much more there, that was carefully planned. There were different spaces, main spaces to stay and sit, places to climb. And the key structural point was a three-dimensional grid that became entirely plastic by controlling voids and transparencies, and the way in which light passed through and so on.



Figures 4-9. Sou Fujimoto. Serpentine Gallery Pavilion, 2013.

In many senses, by living the grid, mathematical formulae were strongly there as a living thing. And for a common person and due to the simplicity of the

object, such formulae were more evident there than those to be found in the Great Pyramid or in the Parthenon. We may argue that those ancient formulae had even more complexity than those of the Pavilion because a cube-based argument can be a metaphor for anything but perhaps it would be stronger by being a metaphor for a cube insofar as it becomes a material-materialessness thing. Thus, the object combines in an intricate way, a representation of a world-outside-the-world-to-the-world-to-us. And at this moment we have what mathematical formulae can tell to architecture at an acme of its existence and in this sense they challenge both phenomenology and structuralism.

Last but not least, there seems to be an intuitive notion of metamorphosis as an active process in creation and the latter is particularly broad to our existence. What takes us from reality to mathematics is a deep comprehensive process of metamorphosis that we can stabilize at the end and use it as support to many purposes. The creation of the art object is also a process of metamorphosis from a given reality where it does not exist yet to a new world where it is brought in, unique, exceptional, beautiful. Thus, the sense of reality and metaphor at the core of architecture seems to be an intricate and deep embodiment of myself with all my body-mind tools that act extensively on my adherence to my self and to the world. This might be the reason why mathematical formulae look so attractive in the realm of architecture. They seem to have come to life at the dawn of civilization and that they can live forever, beyond myself, to infinity, and thus we might even think about a metaphysical link to a mathematical order of the world that we can create anew.

Figures 10. Sou Fujimoto. Serpentine Gallery Pavilion, 2013.

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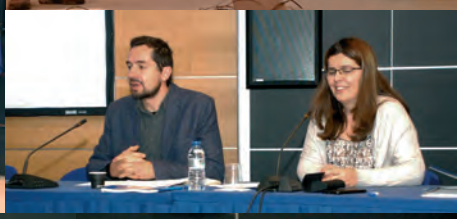

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