ARCHITECTURAL GESTALT AND SOME ASPECTS OF ARCHITECTURAL THINKING

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ABSTRACT

We are largely surrounded by increasingly complex technical systems. These systems often border on the absurd even though they rely on logical and physical reality. This is because they move away from the "logical efficiency" of natural forms. This text approaches some specific aspects of entities which are achieved by human beings, i.e. those connected to their "formative structure". I emphasize that the aesthetics and the functions of such products are determined by the consonance between the formative structure and a natural structure, and I called this "architectural thinking". As an example, I consider the well-known "golden number" found both in the human body and in artistic and technical products such as Parthenon[2]**.**

Two questions which this text addresses are: What is a "formative structure"? How can the consonance, or harmony, between such structure and that of a "natural"" one be approached?

KEYWORDS: architectural thinking, architectural gestalt, formative structure, logical structure of the functions, physical structure

What makes architectural thinking and an architectural approach differ from other modes of thought? This mode of thinking transcends others. Architectural thinking aims to develop the human capacity of efficiently acting in the environment (without neglecting ecological constraints) in opposition to the old ideal of static, contemplative knowledge.

The architectural thinking/approaching model tries to cover in every possible way all the functions of a system, including the technical, human and aesthetic aspects. For this reason it is not subsumed in the system but instead it exceeds the system[3]. Of special interest is the way the integration is viewed within the framework of architectural thinking. In opposition to the systemic "objective" gestalt, the architectural gestalt cannot be separated from the subject due to the fact that it is the determining factor that creates and intercepts that "whole" of the architecture and "produces a unique, scientifically indescribable state"[4].

My thesis is that the so called *architectural gestalt* is far from an uncontrolled and uncontrollable subjectivism. I think that some essential features of an architectural gestalt are found both in the technical creativity and in the artistic one.

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I shall start from the observation that imagining the architecture of a future product implies imagining a structure that is meant to realize it. But obviously the architecture must not and cannot

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[2] Vitruvius, *The Ten Books of Architecture,* in *Book III, cap. On Symmetry: in Temples and in the Human Body,* trans. Morris Hick Morgan, (New York: Dover Publivation, Inc., 1960), 72. See also Ghyka Matila*, Estetica şi teoria artei*, vol. I, cap. II: Proporţia divină, Bucureşti: Editura Ştiinţifică şi Enciclopedică, 1981, and *The Divine Proportion,* MA 341, Topics in Geometry, Lecture 20 UK,
[online, http://www.ms.uky.edu/~droyster/courses/fall11/MA341/Classnotes/Lecture%2020.pdf] [7 July 2017].

[3] Drăgănescu Mihai, "Gândirea arhitecturală", in Milcu St., Stancovici, V.,(eds.), *Interdisciplinaritatea în ştiinţa contemporană*, (Bucureşti: Editura Politică, 1980), 206.

[4] Drăgănescu, *Op. cit.,* 206.

be reduced to a structure, as the system cannot be reduced to its structure[5]. If I still insist only upon the structural aspect of the architecture of a future product that is because, as a first approach, I consider it sufficient to tackle some features of the architectural gestalt.

From the designer's point of view, the product can be seen as a hierarchy of structures. Such a bottom-up hierarchy may be the following:

(a) A first structure, directly visible, of the "physical" product-object, which I call *physical structure*.

(b) The second structure, more profound, is *the logical structure of the functions* of the product, which are implemented by means of a physical structure.

(c) The third structure, the most profound, which I call *the formative structure/image*, determines and conditions the logical one, or, in other words, is implemented by means of the logical structure.

One can see the difference between my approach and that of Mihai Drăgănescu who proposes the following hierarchy of structures[6]:

- the architectural level of the functional structure;
- the architectural level of the concrete structure;
- the architectural level of the system as a whole conceived and composed by the above two levels.

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As far as I know, the formative structure of a product has not yet been explicitly emphasized. This structure is to a great extent responsible for the appearance (or absence) of the architectural gestalt. In the art, the architectural gestalt produces an aesthetic pleasure while in the designer or the user of a technical product, this gestalt produces a state similar to one called "job satisfaction" in the Anglo-Saxon literature. Consequently, there are some good reasons to dwell at length upon this kind of structure (i.e. formative).

The main reason emphasizes the intimate and efficient correspondence among the three kinds of structures (physical, logical, and formative). It is, for example, about a certain class of technical-art products, namely those meant to harmoniously reproduce sounds. Indeed it seems that there exists here a perfect joining between certain simple numerical ratios (for example, between the thickness and length of strings in a string instrument) as formative structure, product functions, and the structure that gives shape to the physical object when it is manufactured[7] .

Here is a second example: the harmony between the efficiency and aesthetics of the "aerodynamic natural form" (formative image) and the functional structure which is found in birds as well as in some products on an industrial scale (cars, airplanes, ships).

[5] For phenomenological aspects see Drăgănescu Mihai, *Ortofizica,* (Bucureşti: Editura Ştiinţifică şi Enciclopedică, 1985), as well as Manolescu Gorun. „An Architectural Modeling Approach by Means of Categories and Functors", *NOESIS, Travaux du Comité Roumain d'Histoire et de Philosophie des Sciences,* XXVI, 2001, 79- 94.

[6] Drăgănescu Mihai, "Gândirea arhitecturală".

[7] It is a known mathematical way of determining the ratio between lengths of homogeneous strings and of strings of the same thickness, meant to reproduce the sounds of the scale. It derives from the Pythagorean principle, according to which numbers are the „model of everything", see Taton René et autres, *Histore générale des sciences,* Tome I: *La science antique et médievale* (Paris, Presses Universitaires de France, 1957) translated into Romanian by Neagu V. et al., (Bucureşti: Editura Ştiinţifică), 248. It is also worth mentioning that at the end of the 11th century a monk called Theophile established a strictly empirical rule for manufacturing the bells that ring the key note, the third, the quint, and the octave. According to him, the bells must have their diameters proportioned to 30, 24, 20, and 15, and their weights in inverse ratio to 80, 41, 24, and 10 (Taton, *Op. cit.,* 634).

Eventually, I have a related example of the *internet* and its architecture. Described here is a topological profound structure (formative structure), namely a complicated net structure, thru which the functions of the product are ordered. Such a structure is similar to the structure of the Superstrings "envisioning the fabric of spacetime as if it were somewhat like a piece of material net out of which the universe is tailored"[8].

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What perspective can we gain on the formative structure from this discussion? What defining characteristics of a formative structure could be put into relief from our discussion?

First of all, if we are able to look closely at the outlook of the third kind of structure (i.e. formative), we notice that this structure has a maximum of potentiality related to a respective logical and physical structure. It implies the existence of an (numerable) infinity of logical structures, as well as logical structures involving the existence of a new (numerable) infinity of physical structures.

Secondly, one notices a kind of *a priori* state of a formative structure that could be linked to some abstract structures which are found in nature.

Finally, one notices that the efficiency and aesthetics of a product appears when its formative, profound structure has a "natural" character.

But how can the consonance between the formative structure of a future product and the appropriate structure already existing in nature being realized? The importance of giving the right answer to this question is obvious. In fact, I consider that this consonance has the power to determine the appearance of the architectural gestalt of the future product. In this instance I am tempted to assimilate the architectural gestalt's elaboration to a process of an intuitive nature. Further development of such processes, after some "incubation" period which is marked by fixating intense concerns on the subject, spontaneously reveals the solution, assuming the form of an «insight». Such a solution immediately reveals itself (as a kind of direct inner perception) and it thoroughly and conspicuously imposes itself upon the subject.

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In this point of our discussion I ask you to permit me a parenthesis. So, an analogy between the appearance of an insight and the resolution of a Zen koan seems to be made. I hope that the following quote is significant.

> "The koan is given to the student first of all to bring about a highly wrought-up state of consciousness.
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> The reasoning faculty is kept in abeyance, that is, the more superficial activity of the mind is set at rest so that its more central and profounder parts which are found generally deeply buried can be brought out and exercised to perform their native functions.
>
> The affective and cognitive centers which are really the foundations of one's personal character are charged to do their utmost in the solution of the koan.
>
> When the mental integration thus reaches its highest mark there obtains a neutral state of consciousness which is erroneously designed as «ecstasy» by the psychological student of the religious consciousness. The Zen state of consciousness essentially differs from ecstasy in this: ecstasy is the suspension of the mental powers while the mind is passively engaged

[8] Greene Brian. *The Elegant Universe, Superstrings, Hidden Dimensions, and the Quest for the Ultimate Theory*, (New York: Random House, Inc., 2003), 376.

in contemplation; the Zen state of consciousness, on the other hand, is the one that has been brought about by the most intensively active exercise of all fundamental faculties constituting one's personality. They are here positively concentrated on a single object of thought, which is called a state of oneness (*ekagra*). It is also known as a state of fixation (*daigi*).

This is the point where the empirical consciousness with all its contents is about to tip over its border-line, and get noetically related to the Unknown, the Beyond. In ecstasy there is no such tipping of transition, since it is a static finality not permitting further unfoldment. There is nothing in ecstasy that corresponds to «throwing oneself down the precipice» or «letting go the hold».

Finally, what at first appears to be a temporary suspense of all psychic faculties suddenly becomes charged with new energies hitherto undreamed of. A penetrating insight is born of the inner depths of consciousness, as the source of a new life has been tapped, and with the koan yielding up its secrets"[9].

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I'll come back to our discussion. Now I will only refer to technical products but their aesthetic (artistic) aspects cannot be neglected.

The value of a product is given by both its utility and its performance as well as by «job satisfaction» when it is used. If taken broadly, utility is seen with respect to the period of product elaboration (by identification in detail of functions). Performance including aesthetics, especially in the case of large-scale systems, is often almost ignored. On the contrary, I think that only to be aware of performances, in terms of qualitative and quantitative ones, is the catalytic factor which encourages and brings about, during the technical creativity process, the appearance of the adequate formative structure from the point of view shared by us (consonance).

The idea of architectural gestalt and architectural thinking as approaches to design significantly updates the problem of inter-correlation and inter-dependence of the subject and the object. No doubt, there is a disturbing subjectivism, which can be an obstacle to acquiring knowledge. But there exists a creative and constructive subjectivism which weaves the threads through the true knowledge and activity out of respect to the objective and natural truth.

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