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## THE STRUCTURE OF THE ARCHITECTURAL LANGUAGE

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**Abstract.** The article is devoted to compositional language of architecture. A hypothesis is proposed that the architectural language has its own semantic, morphological and syntactic structures. A theoretical model of the language of architecture is offered.

**Key words:** architectural language, semantics, morphology, syntactic architectural language, compositional thinking.

### 1. Introduction

The issue of research of figurative art language is not new. The idea that architecture has its own language has long stopped being contested. Many authors write about the language of modern architecture, about the poetics of architectural language, the diversity of expression, the factuality of architectural language. However the language of architecture is rarely discussed. How is it arranged and how should it be used? Does it match our regular spoken (natural) language or is it some kind of special language? Maybe it's a scientific language or is it closer to literary or pictorial language? Has it always been as it is now or, if not, how has it changed?

### 2. Basic Theory Part

Before answering all these questions, let's clarify the relationship between natural and artistic languages. Thanks to the research by Ferdinand de Saussure, Charles Sanders Peirce, Michel Foucault, Y. Lotman, Umberto Eco and others, it is known that languages of different cultures and peoples differ in structure, vocabulary, grammar rules etc., although all languages have some common rules, system structure of language units. Spoken or literary language is commonly known as "natural language". Natural language has many qualities common for all languages, but it differs from artistic language of various arts (painting, architecture, cinema, ballet etc.). Any type of art can be regarded as a sign system, i.e. as a language, for example, language of cinema, sign language. The language of architecture, just like any other artistic language, has common systematic features with natural language, but it also has its own particular distinctions, related to the material being handled by the architect. Architectural language does not coincide neither with poetry language, nor painting language, nor other technical or scientific languages, although it has certain similar features.

One more clarification concerns verbal and morphological languages. The architect's language is rich and diverse. In general, two main languages of architecture must be distinguished. The first one is verbal language, i.e. language of professional terms, concepts, notions and categories. Conceptual language of architecture includes many concepts, such as form, function, tectonics, scale, proportion, symmetry, rhythm etc. They arrange the architect's thinking both in the project's development and in its "reading". Owing to it, the architect speaks to other professionals (theorists, practitioners, critics, associated professions). The second one is language of architectural shapes, i.e. special artistic language that allows to embody the idea and artistic intent in the material of the composition. This is the one that we will examine, but for this we will engage verbal language of professional terms and concepts. For example, order as a concept relates to the first one – verbal

language, and as an artistic shape – to the second one. As an artistic shape, order is an expressive architectural medium (informational, sign, decorative, symbolic, image-bearing). It is called upon to convey (transmit) a certain artistic content-text to the viewer. Hence, order turns into special language or sign system, comprehensible not only to the author, but also to the correspondent.

Thus, we will consider architectural language as an artistic sign system, developing together with the architecture as a profession.

### 3. Result and Discussion

Any language notions are studied by a special science – semiotics – general theory of sign systems, which is subdivided into three main sections: semantics studies the meaning of signs, syntactics studies the patterns of interconnection of signs into integral messages or texts and pragmatics studies the effect of signs upon the percipient. The definition of sections of semiotics has been given by Charles Sanders Peirce and Charles W. Morris. S. Hohlova [1, p. 102] writes that “sign operation (“semiosis”), according to Charles W. Morris, implies three senses: semantics, which studies “the relation of signs to objects”, syntactics, devoted to relations between signs, and pragmatics, interested in “the relations of signs to interpreters” [2, p. 47, 50].

However, it is not feasible to apply the notions of the sign systems theory to architecture in a literal way considering the particularities of architectural material. It is widely accepted that the material of architectural expression include spaces and masses, combined using various patterns of their arrangement into architectural shapes. In general it can be called morphology, which is essential for architecture. But morphology is not always considered to be a section of semiotics. Encyclopedias define morphology (Greek: μορφή – “shape” and λόγος – “doctrine”) as “a field of linguistics, the main subjects of which are words of natural languages and their significations (morphemes). ... The term “morphology” can also signify a part of language system (or “level” of language) – in particular the one that contains the rules of arrangement and understanding of words of a specific language. ... Morphology as a field of linguistics in this sense is a generalization of all particular morphologies of specific languages, in other words, an aggregate of information about all possible types of morphological rules. Morphology and syntax compose grammar... A number of linguistic concepts (generative especially) do not view morphology as a separate level of language” [3].

Since it’s extremely important for architecture to view object’s structure as an element of language, it’s necessary to introduce the morphological aspect along with semantics and syntax while formulating the definition of language for the area of architectural activity. On this basis, let’s put forward a hypothesis that architectural language has its own semantic, morphological and syntax structures.

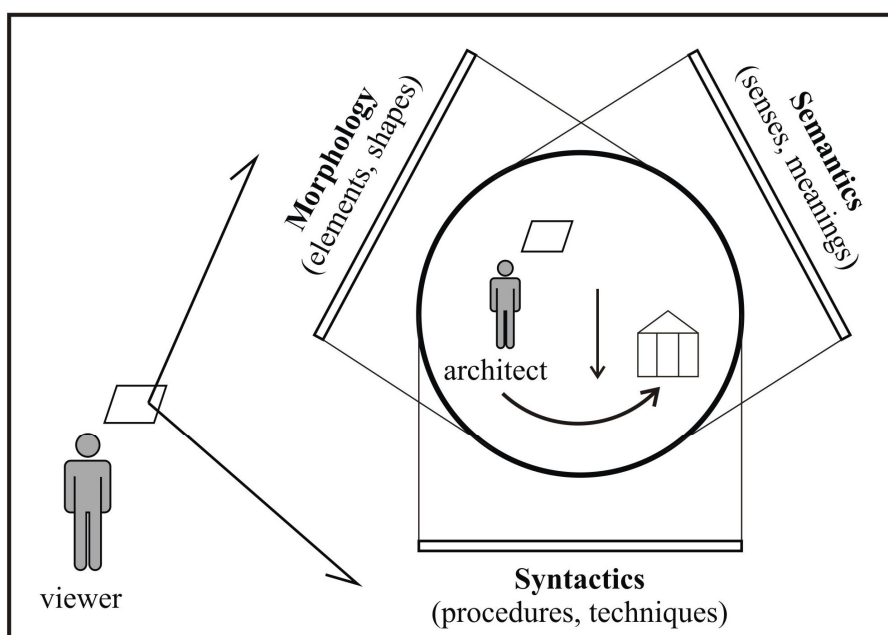


Fig. 1. Theoretical model of structure of architectural language

Let's describe architectural object as a result of professional activity. On this basis three main substantial dimensions can be differentiated, which we will set in the theoretical model of structure of architectural language (Fig. 1). The first aspect relates to the sense of architectural shape, the total of values that constitute the content of the piece of art – e.g. **semantics**. Guided by the experience of semiotics, we can confirm that artistic language of architecture is a sign system which connects the meaning and visual image. Combination of signs in a specific sequence or pattern forms a text or a message, which transmits or conveys some kind of meaning. Architectural shape is not meaningless despite its abstractiveness. It always has some kind of content “ciphred” in it.<sup>1</sup> Architectural shape can tell about social priorities, the owner of the building and his/her preferences, the functional purpose or construction principles of the building and much more. The substantial side of art and its reflection in the architectural shape in the architectural theory and professional literature had begun to be discussed only in the sixties of XX century with the coming of post-modern ideas.

The second aspect is **morphology**. Language system of architecture is arranged in a complex way. Like other languages, it has several levels of language units. Higher levels include units of lower levels. Lower levels include finished elementary units (for example, architectural mouldings, which compose order parts in certain combinations, which in turn compose whole compositions, such as colonnades, portals etc.). A number of language elements, connected in one way or another, form a certain unity and integrity. This way the morphological basis of architectural language is formed. It constructs the hierarchic structure of architectural vocabulary. Combination methods of such units correspond to grammar and syntax rules of regular language. Language units conform to certain syntax order rules and usually don't break them in the framework of a certain literary movement or style. Aggregation of language units by notional (semantic) characteristics forms the semantic field. A language of a certain style is uniform, i.e. it's a sign system, in which signs are connected both by morphological and syntax rules, which lets create artistically significant images.

Sign in architecture expresses artistic ideas. Like language sign, architectural sign is material and perfect at the same time, but instead of “acoustic image” it has a visual image, which signifies certain meaning, connected to the idea of the piece of art.

Architectural signs have their particular features:

1. Sign has a meaning attached to it by the system in which it is being used; the meaning depends on the type of professional activity and cultural context in which the signs lie; A. Ikonnikov emphasized that “signs” that compose the language of architecture vary greatly, even though they have invariable features that secure their connection with the meaning” [5, p. 103].

2. The same signs can change their meaning depending on the system (context) in which they are being used; i.e. the same sign can mean different things depending on the situation in which it is being used. For example, order shapes in the architecture of ancient Rome and baroque style meant different things;<sup>2</sup>

- it can be said that architectural signs can be monosemantic and polysemantic. The monosemantic ones belong to one culture and the polysemantic ones are used by different cultures [6].
- architectural signs have the tendency to perfect or change their morphology.

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<sup>1</sup> Thus, while discussing the connection between the shape and its meaning, V. Sidorenko says that “the approval of shapes, techniques and methods as socially significant calls for symbolization of the appropriate object shapes and composition methods. This is why object shape possesses a certain symbolic significance and esthetic value within the framework of the culture in question. And the practical and in the wide sense social-cultural expediency of the subject shape in question usually serves as the primary and essential condition of its gaining of symbolic value” [4, p. 1].

<sup>2</sup> A. Ikonnikov, while emphasizing the attention on the shape, called this sign feature “an instability”. He wrote that “taking the instability of “signs”, architects varied their shapes even in the limits of established artistic systems according to the piece of art's structure on the whole (let's remember Vignola, who never reproduced his own canon in specific buildings). Hence, unlike natural language, architectural language is composed out of signs, whose shape can be varied, and the meaning leaves room for interpretation, which depends on the percipient individual, his/her personality features and perception” [5, p. 104]. A. Ikonnikov himself, while discussing the multi-purpose of order system in another text, called this phenomenon “mobility of meanings of architectural order”. As an illustration he cites such reasoning: “For the humanist age of Italian Renaissance order symbolized traditions and the spirit of antiquity; in France of the time of Louis XV it was related to expression of absolutist ideas. After the war of 1812-th thinking strata of Russian nobility saw the language of strengthening of “eternal” ethical values, civicism and human dignity in classicism architecture. A few decades later, after the Decembrists' tragedy had shown the utopian nature of hopes of establishing of order corresponding to “human nature”, the former ideal started to be perceived as a formal casern strait-jacket, imposed on the social taste. In various cultural contexts physically identical elements found different meanings, being included in different association chains” [5, p. 108].

This way, order shapes of Ancient Greece were simplified and perfected in Ancient Rome. In the framework of one historical age they also change from simple and rough shapes into more complex and perfect ones. For example, the system of flying buttresses, counterforts and nervures in roman and gothic architecture.

The third aspect concerns the operational system of professional activity, i.e. syntactics of architectural language. The procedures of compositional work, rules of artistic construction, methods and techniques of working with space and shape etc. compose the syntax of architectural art. For example, proportioning, symmetric and rhythmic actions, rules of order composition help us assemble shapes into something integral, divide and transform an architectural body until we get the desired result.

Architectural grammar is a complex of rules of a language (style, age), which governs (defines) the accuracy of formation of architectural signs into certain combinations (words, texts). For example, the combination of elements of the Corinthian order into the shape of portal allows to give the facade of the building the effect of solemnity, respectability, pomposity.

The main fields of grammar are morphology and syntax, like in natural languages. Architectural morphology is a set of rules of formation of primary semantic units (words) from small units (alignment of belts in a part of the order) and rules of shape formation into meaningful combinations (of portals, arcades, porticoes), and architectural syntax is a set of rules and techniques of formation of integral combinations – facades, ensembles etc. (word expressions).

It can be affirmed that systemic features of the corresponding language can be distinguished in the framework of an integral historical period, called age.

Traditional for XX architecture criticism text mainly deals with description of the shape of the architectural object, i.e. its morphology. Morphological description fixes the objective side of the piece of art. It uses such data about the object that does not depend on our feelings nor our cultural experience. This includes its dimensions, geometry of its shape, its ruggedness, texture, color and other data, which we get empirically. Such words as archetype, rhythm, meter, tectonics etc. are often used. All these are morphological features of a piece of art. However such description cannot claim to be a full description of an object.

The fourth one – external toward the listed three aspects is pragmatics, which follows the way the piece of art is being perceived, but it's a topic for a separate study.

Thus, it can be concluded that architectural language embodies a system of sign architectural shapes, which can convey various senses and contents by applying compositional techniques and patterns of arrangement and combination of these shapes, i.e. architectural language possesses its own semantic, morphological and syntax structures. It reflects on the theoretical model of architectural language structure in three dimensions (mirrors), each of which fixes its own aspect (Fig. 1).

A well-known architectural theoretician A. Rappaport claims that by viewing architectural language we can compare “scaled levels of architectural units with levels of language units. Elements of architectural shape correspond here to phonemes, sounds, the shapes themselves corresponds to words, vocabulary, and the pieces of art correspond to phrases and texts” [7, p. 72]. But it's only an analogy, there is no literal correspondence. The same idea is stated by Charles Jencks in his book “The Language of Post-Modern Architecture”: “Architecture and language have various kinds of analogies, and if we handle terms loosely, we can talk about architectural “words”, “phrases”, “syntax” and “semantics” [8, p. 42].

Every language follows its own patterns of letters combination into words, words into phrases, phrases into texts etc. In architecture we observe similar occurrences: ancient Greek order is put together out of certain elements (base, body, chapter...) in a certain order, colonnades and arcades have their own rules of construction; gothic language uses such elements as flying buttresses, counterforts, ribbed vaults etc., which combine in a special way. Each age develops its own rules of working with elementary shapes, their transformation and combining into more complex formations. At the same time these rules retain their stability over the course of the whole age. Such normative organization of language allows it to develop. “Without constant vocabulary compiling, speech culture criticism, regulation and proper word usage – A. Rappaport claims – language and writing could not exist and develop. In architecture though such normative work has fallen into an area of certain neglect, which is – at least, in part – is the reason of degradation of architectural culture and depletion of architectural shapes” [7, p. 72].

But it cannot be said that such work has not been conducted. Well-known treatises on renaissance and classicism orders (Giacomo Barozzi da Vignola, A. Palladio, V. Scamozzi, S. Serlio, G. Blum, F. Blondel, A. C. Daviler et al.), Johann David Steingruber's "Architectural alphabet", published in 1773 and Antonio Basoli's "Pictorial alphabet", published in 1839 in the *Alfabeto Pittorico* book [10], shape catalogues of historic styles of eclectic age (J. N. L. Durand, J.-B. Rondelet and others) [11–12], morphology experiments by N. Ladovsky, K. Malevich, Y. Chernikhov and their successors-deconstructivists Richard Meier and Peter Eisenman, "Architecture lessons" by R. Krier [13], directed at defining the modern vocabulary of architectural shapes – all of this is selection work, conducted with architectural language. This kind of works, including "technical study on artistic shape" was called architectural poetics by A. Rappaport. Thus, polishing of language abilities and perfection of its shapes is interpreted as poetic art, which is capable of creating masterpieces.

A detailed analysis of the concept of poetics in architecture is given by the authors of the book "Composition theory as architecture poetics". Specifically, I. Dobritsyna writes: "The term poetics originates from the Greek word ποιηίν (do/make) and the most precise meaning of the concept is broader and is based on the notion of poetics as a philosophical basis of aesthetics. ... Poetics is the set of principles and rules that the architect develops in his/her work, deliberately or naturally, like any other artist, the techniques and methods, which are being used to submit his/her internal monologue to people's judgment. Poetics is also the principles and rules, methods and techniques to which a certain art school sticks to. From the point of view of a critic of architecture, poetics is his perceived artistic peculiarities exhibited by a particular author, school, a whole age. The peculiarities of poetics, which define the features of a whole age, clear up with analysis of multiple particular manifestations and in theoretic correlation with the spirit of the age, but, usually, after the laps of a certain historic period, needed for the fixing of unique features. These features become more apparent in notable turns to new artistic aspirations and become easier to identify compared to the poetics of other historic ages" [14, p. 362].

Agreeing on the whole with the expressed point of view, we can use the concept of poetics as a comprehensive concept. However it requires elaboration and correlation with the notion of artistic (compositional) logic in architectural creative work. At the same time it is important to emphasize that the notion about the mode of compositional thinking, which defines the nature of artistic work of a certain age, was introduced as far back as in 1987. The concept of "recomposition" was also introduced<sup>3</sup> [15], which explains the reasons and ways of transition from one type of thinking to another, which I. Dobritsyna calls "turns to new historic aspirations". Such wording, however, does not seem to be sufficiently precise. Let's emphasize that the concept of artistic logic (including thinking modes) is an essential part of the concept of method of artistic work, which requires a steady unity of various complementary thinking techniques, which allows to express the distinctive senses of the age, school or the author in persistently repeatable shapes. The artistic logic of the age defines the features and the nature of its language of expression.

The semantics of architecture correlates with architectural subject, which began to be discussed by post-modernists in the beginning of the XX century and the concept of function, which was a talking point of functionalists in the beginning of the XX century. Architectural subjects also include such functional aspects as various processes of life activity or cult scenarios (liturgical activities), which require their own spatial design. Sense or symbolic aspects also include all tectonic notions which allegorically tell the viewer about the object's structure, statics, dynamics, construction's straining etc. For example, V. Markuzon claimed that "tectonics and the range of related tectonic notions are what constitutes the semantic basis of architectural artistic-expressive language" [16, p. 44]<sup>4</sup>.

### 3. Conclusions

Thus, it can be conceived as proven that architecture can be viewed as a sign system. To avoid terminological confusion it is preferable to speak of semantics, morphology, and syntax of architectural language, avoiding when possible any terminology borrowed from related branches of science.

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<sup>3</sup> "The process of recomposition or change of compositional thinking mode, resulting from radical alterations in the method of social production entails radical reorganization of the system of professional notions, and also the methods and techniques of their application in design practice, theory and education" [15].

<sup>4</sup> A. Ikonnikov drew "attention to the peculiar feature, noted by V. Markuzon: "building elements" – unlike words of natural language – never exist separately, in some "lexical" form, but always in the definitive reality of context in question". Signs of architectural language aren't "read" consecutively, but are perceived simultaneously, in the system of shapes of a piece of architecture, and the meaning they carry, depends on the system's connections [5, p. 103].

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### ПОБУДОВА АРХІТЕКТУРНОЇ МОВИ

***Анотація:** Досліджено композиційну мову архітектури. Висунуто гіпотезу про те, що архітектурна мова має власну семантичну, морфологічну та синтаксичну структури. Запропоновано теоретичну модель побудови мови архітектури.*

***Ключові слова:** мова архітектури, семантика, морфологія, синтактика архітектурної мови, композиційне мислення.*

Переклад: Игорь Пужай \ Igor Puzhay.