

University of Tartu  
Department of Semiotics

Kristina Ivakhnenkova

Image and Idea in architectural language formation  
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Supervisor: Professor Mihhail Lotman

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I have written the Master Thesis myself, independently. All of the other authors' texts, main viewpoints and all data from other resources have been referred to.

Author: Kristina Ivakhnenkova .....

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## Image and Idea in architectural language formation.

This venture in thought does not view building as an art or as a technique of construction; rather it traces building back into that domain to which everything that *is* belongs.

Martin Heidegger

### Introduction

Semiotics of architecture is a new subject which considers meaning formation and its perception in an architectural artwork. It relies on the materials of art theory, history of architecture and semiotics itself, and besides it, philosophy, philology, and linguistics. Architectural semiotics, as an independent discipline, possesses quite a small library of materials; moreover, there is no consistent study approach among existing works. However, even among current works, there is lack of the common approach, which also a characteristic of the general semiotics.

Semiotic research (as well as architectural semiotics) depends on the understanding of the process of signification (*semiosis*). The formulation of the nature of *semiosis* also affects the definition of following terms such as *the sign*, *language*, *metaphor*, and so on. Even if semiotics, in general, introduces the usage of the set of linguistic terms in humanities, different researchers often use the same words in incompatible with each other ways. Mihhail Lotman (Lotman, M. 2002) proposed a consistent analysis of this split in semiotics, opposite sides of which he has formulated as atomistic and holistic semiotics. The difference of these approaches is determined by the understanding of the notion of **sign** and the nature of *semiosis*. Architectural semiotics, of course, also shares the same opposition in approaches.

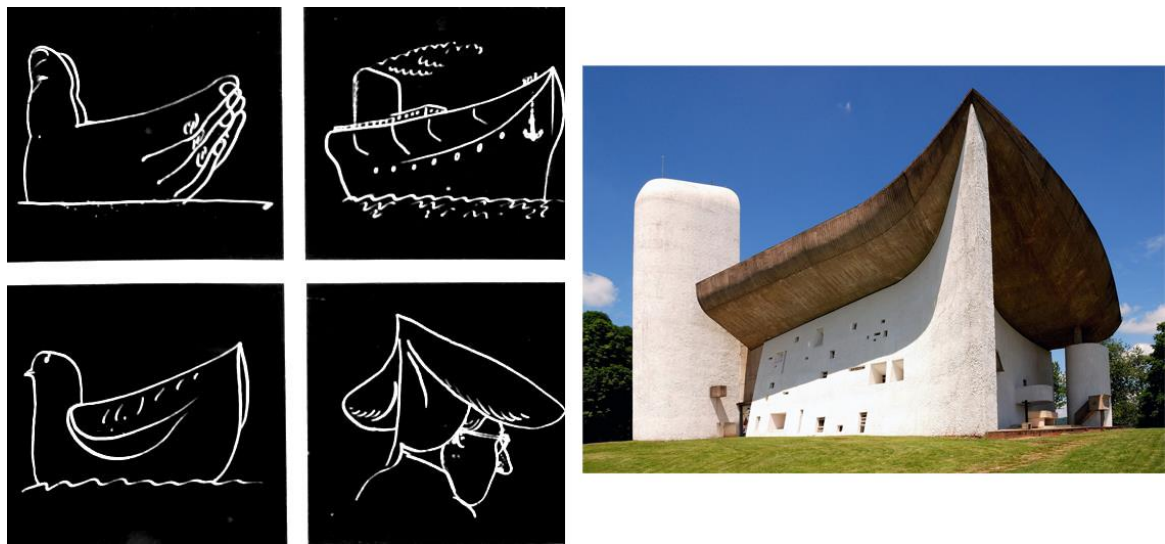
Atomistic semiotics, represented by Charles S. Peirce, defines the *sign* as an "elementary thing," which "does not consist of any smaller components" (Lotman, M. 2002: 515). Hereby, according to Peirce, a *language* arranges elemental *signs* into sentences;

Mikhail Lotman writes that "we should not wonder that for Peirce, language is in comparison with sign far less an important phenomenon: the correct description of signs guarantees the correct description of the language." (2002: 515). Signification for Peirce would be rather a reference of one meaning to another, he would define a *sign* as following: "A sign, or representamen, is something which stands to somebody for something in some respect or capacity" (CP 2.228), the inner meaning of the *sign* is, however, predefined. It implies that the meaning of some symbol (signification result) is covered in the relations that the representamen is involved in.

Similarly, Charles Jenks wrote his famous work on architectural language (Jenks 1985). He paid particular attention to the *metaphors*, which he described as *signs* that "suggest a thought— signifies many different things at once" (Jenks 1985: 49). As an example, Jenks took the Chapel Ronchamp by Le Corbusier and later sketches made by Hillel Schoken (*pic.1*). Jenks called these images of a ship, duck, nun's cowl a *metaphor* on the Le Corbusier's building, allegedly ciphered in the Chapel (Jenks 1985: 49). What is significant, Le Corbusier never intended to hide any visual association into his object; he depicted the image of this Chapel, which came to his mind in its wholeness (Avvakumov). Thus, *metaphoric signs*, according to Jenks, signified something outside of the building structure, i.e., outside of the architectural language. The thought Jenks proposes deprives architecture of its spatiality, which is the essence of architecture (like words in verbal languages). However, what should be questioned, from the position of visual arts, is the way bird, human clothes, or mean of transportation were transformed into images we see on the picture (*pic.1*). Jenks considered them as signs given a-priori, but any superficial association that may occur, such as this duck or nun's cowl, refers not to the Chapel, but instead to the mediation of the idea of the duck, ship, and cowl.

In its turn, for Saussure, the *language*, which he strictly distinguishes from the *speech* (Saussure 1998: 23), is what constitutes the fundamentally twofold *sign*. Saussure calls two parts of the *sign* *signifier* and *signified*, as an example, he brings the *signification* of a tree by a word "tree" (1998: 67). As one could mistakenly simplify, the word "tree" does not signify the real existing tree (as Peircean representamen refers to the object), the pair *signifier/signified* does not work on the principle of reaction-stimuli or as an allegory. There is no real tree, the tree as an object that exists for us only through the *signification* of the "tree-ness." This tree-ness is the *signified* of the sign tree, expressed by the signifier— the

word "tree." When we call a tree by the word "tree," we, at the same time, define the meaning of the tree, its "tree-ness," according to the *language* we speak. Furthermore, both *signified/signifier* appeared **simultaneously**; they do not exist without each other. It is understandable that any tree signification refers to the "tree-ness," but the "tree-ness" itself appears in our speech at the moment we ask a question about it. This mutual dependence is illustrated by the opposite pointing arrows (*pic.2*). Therefore, the meaning for Saussure is formulated through the semiosis; it is not an ascribed characteristic to the already existing sign.



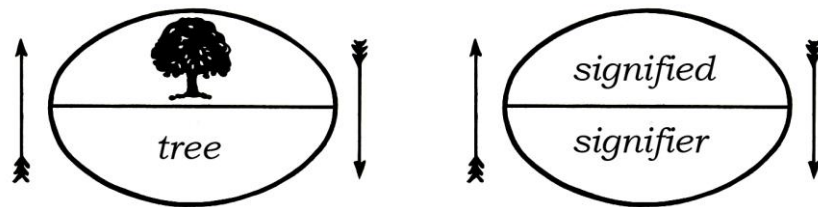
Picture 1. Le Corbusier, Chapel Ronchamp: drawings by Hillel Schoken (on the left), the realised project (on the right).

Saussure and Peirce use the same words, but they put different meaning in them. At least due to this reason, their logic systems should not be mixed. It is quite incorrect to consider Saussurean binary opposition as the Peircean trinity lacking *interpretata*<sup>1</sup> (Eco 2006: 67). Even if this information is basic, it must be specified to preclude misunderstanding and explain why in this work I do not use such terms as an *icon*, *index*, *symbol*, and also the word *object* as a *signified*. Considering the description of the *signifier/signified*, the absence of such

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<sup>1</sup> Umberto Eco, describing signifier/signified, writes that they are connected by the language, which he calls a code (Eco, 2006: 66). However, his understanding of the code has no common ground with Saussurean language. This inaccuracy leads to the mixing of Saussurean and Peircean theories. Eco tries to correlate the *signifier* with *interpretata* and *representamen*, which implies that he considers the object (the real object in Peircean triadic structure) as *signified*. However, for Saussure approach, there is no such thing as "real" object.

component as *an object* (when we say, for example, "a real tree") is crucial for us. The concept of the *object* was proposed by Ch. Peirce as a part of a triadic sign vehicle; which generates the meaning. The notion of the *object* is a conventional phenomenon; we cannot claim for sure that it exists because we are unable to comprehend the objects directly without any mediation, i.e., semiosis. The very possibility of *object's* existence, even as a part of a *sign*, would mean that we have hypothetical direct access to a thing. Of course, that is the point of the Peircean triadic model, which represents how different medium wrap the *object* with some additional meanings, but it exactly is my point too— these multi-layered relations are the "real object."



Picture 2. The relation of signifier/signified forming a sign, proposed by Ferdinand de Saussure.

The general **problem** I am concerned with is the reflection of the Saussurean approach in architecture. The current situation is that the atomistic semiotics dominates in architectural research. For example, Umberto Eco's work (Eco 2006) is another basic source, after Charles Jenks. He claims, that "there are no inexplicable "expressive" meanings, supposedly rooted in the very nature of forms, but expressiveness is born in the interaction of signifiers and interpretative codes"<sup>2</sup> (Eco 2006: 279). This assumption reduces architecture to a mere carrier of some distant outer meaning, the ability to carry the meaning becomes the function of the text. However, I believe that any architectural element (such as a beam, roof, column, wall), on the contrary, has its own inner meaning, that is formed through the process of signification. Even if this assumption may look trivial, this opinion was not discussed in architectural theory<sup>3</sup>.

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<sup>2</sup> He brings an example of a pseudo-Gothic church in New York.

<sup>3</sup> This situation engenders derogative attitude towards architectural semiotics, which is associated traditionally, with postmodern examples, described by Charles Jenks.

Therefore, my **aim** is not only to propose Saussurean holistic semiotics in the architectural field, but also to return spatiality to architecture through this approach. By spatiality, I refer to the human space perception, which is embodied in architecture and is its primal material. As belonging to Saussurean line, I consider Russian Formalism, Tartu-Moscow Semiotics School, including Olga Freidenberg, architect Oleg Yawein, who is influenced by Juri Lotman, philosopher Martin Heidegger, who is hardly can be enclosed in any approach, but who established the dualistic reflection as the key aspect of his whole philosophy.

I think that the sign appears as a self-sufficient thing, and only after a certain time, it acquires application or function. I disagree that the architectural language vocabulary only serves to depict or represent something. Any structure is already a medium of meaning by its very appearance. Any architectural composition means, like symmetry, rhythm, restriction, plasticity, once had been on a level of an independent object. For example, now, we can say that a tower on the façade's centre serves to support building's symmetry. It represents the spatial concept of the middle, which means that the tower takes the middle place, i.e., there is a middle and there are possible objects that represent it. Because the vertical axis of symmetry determines the symmetry, the object symbolising this axis also has to have the same symmetry line. Moreover, they are supposed to overlap. However, initially, all these objects that could symbolise the middle line of the façade, as well as the spatial characteristics (vertical, central, side), were physical pieces. The vertical line existed in the human minds as the World Tree, the imaginary place where God touches the earth. This thought of central vertical axis transformed into the concept of vertical direction and was utilised in structures containing the vertical element. However, all vertical elements still preserve their primal meaning. I believe that this way of thinking can emphasize architectural spatiality, which makes it a self-sufficient discipline.

I am going to use the notions of the *idea* and *image*, which are explained in the chapter on Method. The *idea*, in its turn, could be expressed either as a *metaphor* or *metonymy*; both of which are also described in the Method part. In its turn, the central **question** of this research is what the *image* and *idea* (as *metaphor* or *metonymy*) are in the field of architectural semiosis, how they interact and co-depend with each other and also how their relations broaden our architectural vocabulary.



As a research **object**, I choose the wall as a basic element, no matter what its material, usage, and other characteristics are. In my work, I outline the following wall's stages in architectural language evolution: a room enclosure (*image*), a boundary (*metaphor*), a domain enclosure (*metonymy*). These stages are ways of articulation, they depend on the cultural aspects, while the wall itself is rather a category that includes all the different wall variations in itself.

## 1. Method of the research on architectural semiotics

### 1.1 Research overview: the principal twofold-ness of a sign

The understanding of the notion of languages and semiosis determines the research method. As was mentioned above, my entire work is based on the dualistic structure proposed by Saussure. In the pair *signifier/signified*, firstly, the very tension that appears between these two aspects of the *sign* is substantial. They appear **simultaneously** and imply each other. We do not give names to already existing objects: the creation of the name creates in our mind the object itself.

The most comprehensive view on the duality and the principle of reflection was proposed by Martin Heidegger (Heidegger 1991). He was concerned with the question of the existence of things, their essence. Appealing to the Being, Heidegger points out that the Being and Existence are not the same, as it was discussed from the very beginning of the Western European school of thought until the beginning of XX century (1991: 81). He writes that “Being is minted as Presence, the present [...] due to a temporary nature and thus due to time” (1991: 87). At the same time, the Existence is what allows Being to *be*, i.e., to be imprinted in the Presence (1991: 87). The Existence determines the imprinting of the Being into the Presence, into the domain we are, as mortal people belong. We say that the thing (as artificial object) *exists* meaning that it exists in its time: every thing that exists appears and disappears in the allotted time (Heidegger 1993: 392). However, the people are not temporal for participating in history, but they participate in history **because** they are temporal (Pyatigorsky 2014). Thus, temporality is the principle of the Existence.

Martin Heidegger, as an example, posed a question of a jug – what defines the jug as a thing, which could be asked about any piece of architecture as well: “How does the jug's void hold? It holds by taking what is poured in. It holds by keeping and retaining what it took in.

The void holds in a twofold manner: taking and keeping.” (Heidegger 1971: 169). The twofoldness of the jug consists of the offering and mediation of the offering by the jug’s physical characteristics (such as shape and impermeability). The Being designates the jug (as a complex sign) from the absence, from the nothingness. The Existence allows the jug to *be*; it is its “jug-ness.” The Presence is the jug’s shape, its idea to contain, to hold the offering. As Saussure explain that the *signifier* and *signified* like the two sides of the same paper sheet, Heideggerian jug holds the offering, the confluence of heavens and earth imprinted in the jug. Together they create the jug-ness, the existence of the jug: “After all, the jug is not a container [receptacle] because it is made, the jug has to be made because it is a container” (Heidegger 1993: 317).

In this way, I believe, that dualistic Saussurean signifier refers to the signified in the same way the Presence refers to the Being, and the complex *sign* is the Existence. As Being can exist only through the articulation in Presence, the Presence only exists as the signification of the Being. Heidegger writes that “The meaningful is not meaningful because it has value, but the valuable has value because its meaningful.” (Heidegger 1993: 98). Similarly, Saussure distinguishes the value and meaning in signs, which are represented by two opposite pointed arrows (*pic.2*). The value is thinking focused on the signifier, while the meaning is the thinking focused on the signified.

Ferdinand de Saussure uses the term *concepts* to call the *signified*, while the *signifier* is an acoustic aspect of a verbal *sign*: *sign*’s formal expression. Expanding the domain of Saussurean approach, I would like to reflect this dualistic sign structure on architecture as well. Two components of the sign, in this case, are a spatial concept (such as vertical, symmetry) as *signified* and spatial structure (such as column, tower) as *the signifier*. Quite often, architectural research covers the formal aspect of the *sign*, the process of articulation. Chasing the reality, author debates on the functionalistic and symbolistic modes of expression (Eisenman 1992). As was written above, both Saussure and Heidegger warn readers from mixing value and meaning of the objects. That also is reflected in the epigraph, that is a key idea of this work— the appearance of meaning in architectural language, instead of the functional organisation, where the function is either the constructional function or the communicative function.

## 1.2 Research aim: image and idea in architectural semiotics

The fundamental thought my research is based on is the principled historicism of any *concept* people have. I think that the connection *signifier/signified* evolved through history, which means, it has been changing. Olga Freidenberg writes "[...] denying the historicity of the concepts, we thereby affirm their apriority, i.e., innateness— their pre-existence— to the human thinking." (Freidenberg 1998: 225). Freidenberg concludes that there was a time when there were no *concepts*: "Of course, people always had 'concepts' in the ordinary sense. But in science, the term 'concept' means an abstract way of thinking." (1998: 225). That pre-conceptual human thinking Olga Freidenberg calls the thinking with concrete, holistic *images*, which existed before the art, before Greek metaphors (1998: 229). In this connection, I would like to distinguish the notion of **concept**, which Saussure use, in general, referring to the *signified*, and the notion of **image**, which is a *signified* of the myth-creating period<sup>4</sup>.

Martin Heidegger, on the example of the jug, used the word **idea** to refer to our understanding of the vessel. Exactly this usage of the term *idea* I took from Heidegger's work to oppose it to the Freidenberg's *image*<sup>5</sup>. The *idea* is mediated jug-ness, it is what determines vessel's shape, while the essence of the jug, its existence is the offering imprinted in the vessel's shape. During the creation, the vessel's shape appears in ceramist's mind, the *idea* (Heidegger 1993: 318) that focused on the vessel's manufacturing. What *is* the jug expressed by the form of the vessel is "something we can never learn [...] by looking at the outward appearance, the idea. That is why Plato, who conceives of the presence of what is present in terms of the outward appearance, had no more understanding of the nature of the thing that did Aristotle and all subsequent thinkers" (Heidegger 1971: 166). As a result, in my research, I describe *images* and *ideas*, which are both two types of the *sign*.

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<sup>4</sup> Olga Freidenberg writes: "But the metaphor was not a given quantity and did not take shape immediately. It had its own process of coming into being and historical evolution, the beginning of which took place precisely in Classical antiquity. Its figurality began in the archaic period in Greece with the transferral of concrete to abstract meanings and was still being completed in the more recent times of conceptual "figurality." (Freidenberg, 2006: 27)

<sup>5</sup> Martin Heidegger also uses the notion of image, but differently as Olga Freidenberg did: for him, the image implies rather a visual aspect of some phenomena. The notion of concept Olga Freidenberg used I also refused because she used it to refer to some general understanding of phenomena; thus, she said that images were the concepts for the people from myth-creation epoch.

The relation *signified/signifier* is always built according to some principle (which Saussure called a *language*). In other words, the *sign* bases on the metalevel logic. However, the metalevel itself can be represented either by *text* or *language*. Juri Lotman and Boris Uspensky discuss the difference between *metalanguage* and *metatext* with an example of two expressions: “World is matter. World is a horse. One of these statements belongs to a knowingly mythological text (The Upanishads), while the other can serve as an example of opposite type text [as abstract thinking]” (Lotman, Uspensky 1992a: 58). ***Metatext*** is based on identification, such formulation as a “horse” depict the solid model, it is an *image* of the world. ***Metalanguage*** is based on correlation; the word "matter" uses a descriptive method to explain what the world is, it is "an abstract construct, which has no meaning outside of the language of the description" (1992a: 58). In this connection, **the *images* are based on the *metatext*, while ideas are based on the *metalanguage*.**

Every sign is represented by the *signifier/signified*. However, as far as this research distinguishes two types of signs — *images* and *ideas*, I should describe the differences in their process of signification (semiosis). Russian formalists described the opposition *form/material* that are two aspects of an art piece that are intertwined as *signifier/signified* in the example with a paper sheet (Chapter 1.1). Jyry Tynyanov writes that: “we recently got rid of another famous analogy: form - content = glass - wine.” (Tynyanov, 2002: 33) and “The notion of "material" does not go beyond the form — it is also formal” (2002: 31), that shows that both *form* and *material* anticipate each other. The content of a sign is a *material* that is to be formed by some rule, i.e., the *metalanguage*. For example, a concept of a portal, as an entrance, is a ***material*** that is ***formed*** into a sign such as an arch, a doorway, gateway. However, the *signifier/signified* relation is not the same as *form/material*. If all the signs are built by *signifier/signified*, then only *ideas* have *form/meaning* distinction, which is explained below.

*Images*, as signs, consist of *signified/signifier*, but their *form* and *material* coincide. *Images* “occur only once,” which implies that multiply reproduced *images* do not create a common set (Lotman, Uspensky 1992a: 59): every new *image* represent the same source aspect of a myth. The image cannot be broken down by the descriptive characteristics - “each thing is regarded as an integral whole” (Lotman, Uspensky 1978: 212). The *form* of *images* is the *meaning* itself, because *images* are concrete representations of a signified, in opposition to the abstract *ideas*. For example, in Early Pre-pottery Neolithic proto-architecture (Chapter

2.1.1.), the buildings were round and consisted of a single room, like nomadic huts. The shape of the oval room remodelled the shape of a tomb, as well as its meaning, which refers to the oval shape and meaning of the womb (Freidenberg 1997). The notions of a “room,” “tomb,” “womb” meant the same thing: “to rise,” “to awake,” “to be born.” Every *image* refers to some **part** of the complex *metatext* — a **myth**: “Paradoxically, the mythological world is a one-rank world in the sense of a logical hierarchy, but it is highly hierarchical on the plane of semantic value; it cannot be broken up into markers, but it can be broken up, to extraordinary degree, into parts (component material pieces)” (Lotman, Uspensky 1978: 213). The *images* are different and independent from each other, as are the body’s organs, but they are connected by their subordination to the *metatext*.

Such coincidence of *form/meaning* creates a specific tautology in mythological thinking: the tendency towards nomination (1978: 213). Every new created proto-architectural burial *is* “the womb,” the part of the goddess’ body. The burial does not resemble but remodels it, as if for the first time: “it [text] does not characterize the whole [metatext], but identifies with it” (1978: 213). Every *object-level text* is a possible variation, re-telling of a source text — *metatext*. Primitive images are syncretic; that is why I suppose, there were no different words (in contrast to modern sets of similar concepts) expressing various aspects of life, such as “awakening” and “birth,” they *meant* the same, and this meaning was replicated in the same *form* (Chapter 2.1.1).

After repetition of several *images*, the general mechanism of expression becomes distinct. People formulate the consistent pattern of signification, which can be discussed even without the object itself (Chapter 2.2.2). As a result, we have the concrete object and its abstract characteristics separately. The *image* becomes supplemented by a new possible interpretation, description, that is based on the *idea* of the object. For instance, the *image* of “awakening” is divided into several mediated *ideas*, such as “awakening after death,” “awakening after sleep,” “birth,” “sunrise.”

If on the myth-creating stage *signs* **were** what they refer to, then on the stage of idea, signs **resemble** the source image. Thereby, in the Palaeolithic period, there was only one accessible form of the room; there was no question about the different types of it. Later, mediation brought the influence of the surrounding situation, of assimilation into the context, and as a result, there appeared plenty of diverse types of rooms, even non-residential ones.

Olga Freidenberg (Freidenberg, 2006: 28) describes the difference between mythological *image* and descriptive *concept (idea)* as following:

Characteristic of the mythological image was the lack of quality of representations, so called polysemantism, the semantic identity of images. This phenomenon has been explained by the continuity of subject and object, of the world that is known and the man who knows it. Concrete thought, evoked by a mythological perception of the world, was such that man could conceive of objects and phenomena only in their individuality, without generalization, and in their external physical presence, without entering into their qualities. We call such mythological representations “images” precisely because of their concreteness (object-ness), as opposed to concepts [which I call *ideas* in this work] which “abstract” or pull away the quality of the objects from the objects themselves, thereby giving objects a speculative character.

The *idea* appeared on the transit from *myth* to *metaphor*, through the **duplication** and **allegory** of the old *image*. The allegory was formed when “the initial mythological image acquires another, “new” meaning of itself, of its own semantics” (Freidenberg 1998: 243). Thus, the intact old *image* was augmented by the new descriptive meaning, which caused the appearance of *form/material*<sup>6</sup> (*form/meaning*) relations. The new characteristic becomes a twin of the initial *image*, which created tautology in Greek metaphors<sup>7</sup>.

The *idea* subdues to the *metalanguage* (unlike the *image* subdued to *metatext*), that implies description and explanation instead of remodelling and copying. In other words, for expression of *ideas*, people use abstract categories, like pronouns instead of the proper names. Metatextual one-ness of all the images is overcome, and the plurality appears, the sets of *ideas* generate the context. i.e., spatial relations. Thereby, the *ideas* consider two questions: the question of the particular in general and the general in particular (Chapter 1.3).

*Ideas* are oriented either towards the mode of expression or towards the content; thus, they could be either *metaphors* or *metonymies* accordingly. The *metaphor* and *metonymy*

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<sup>6</sup> “[...] image, without any loss of its characteristics [...] gains meaning, which does not equal its own meaning.” (Freidenberg 1998: 243).

<sup>7</sup> It created a **tautology** in Greek metaphors such as “salted sea,” “flames of passion,” “abyss of despair.” On this stage of early ideas for a Greek person, it would be impossible to say “salted food” (pure concept without figurative basis) or to create such metaphors as “abyss of light”, “abyss of happiness”, or “abyss of beautiful things” (Freidenberg 1998: 241). The descriptive concept has to be augmented with a figurative aspect.

within this research are rather language aspects, a way of thinking, which characterises sign formation. The *metaphor* and *metonymy* are in constant alternation, that could be traced on the example of pendular culture evolution. For instance, Juri Lotman and Vladimir Uspensky describes two types of culture: "[...] for the cultures, that are expression-oriented, it is inherent to depict themselves as a correct text (collection of texts), while for cultures, that are content-oriented, it is inherent to depict themselves as a set of rules" (Lotman, Uspensky 1971: 153). Expression-oriented cultures, similar to XV century Moscow, have the canon – the right text, next to which the rest of the texts were compared with; these cultures are concerned only with the mode of expression because the content is beforehand known. For content-oriented cultures, like European Classicism, abstract metalanguage rules were preceding matter, so, these cultures perceived the content of new texts.

Hereby, the *signs* can be created with *metatext* or with *metalanguage*. *Metalinguistic sign*, in its turn, can be either *metaphor* or *metonymy*. If in *images* the *signified/signifier* were comprehended as identical<sup>8</sup>, then in *ideas*, they became distinct. The two types of ideas are described in the chapter below (see Chapter 1.3).

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<sup>8</sup> For example, the change was understood as death, because it implies the end of one condition and the beginning of the other, as well as the sunset/sunrise. In this connection, the pre-wedding tradition of ritual "death" intends to illustrate the same image of the change (Freidenberg 1997).



### 1.3 Hypothesis: metaphor and metonymy

The meaning of the *ideas* is determined by the dualistic *form-material* joint, which implies that meaning can only be created through the correlation of structural and semantic systems— “human consciousness is heterogeneous” (Lotman, J. 2001: 36). Ferdinand de Saussure writes that “[...] in language there are only differences. [...] Whether we take the signified or the signifier, language has neither ideas nor sounds that existed before the linguistic system, but only conceptual and phonic differences that have issued from the system” (Saussure, 2011: 120). These differences are based on two meaning-generating approaches - syntagmatic and paradigmatic. Syntagmatic relations establish linear coherence of the specific amount of the elements, while paradigmatic relations are not given in a sequence, but appear in our memory and constitute our vocabulary. Ferdinand de Saussure brings an example (2011: 124) from architecture:

From the associative [paradigmatic] and syntagmatic viewpoint a linguistic unit is like a fixed part of a building, e.g. a column. On the one hand, the column has a certain relation to the architrave<sup>9</sup> that it supports; the arrangement of the two units in space suggests the syntagmatic relation. On the other hand, if the column is Doric, it suggests a mental comparison of this style with others (Ionic, Corinthian, etc.) although none of these elements are present in space: the relation is associative.

When people speak, they, at the same time, connect words (so they form semantically and grammatically correct linear phrases), and pick a word from the variety of synonyms (Lotman, J. 2016: 106). Lotman also connects syntagmatic and paradigmatic axes, which constitute human speech, with *metaphors* and *metonimies*, that are rather a principle of meaning-making than a literary trope. Besides that, he connects (Lotman, J. 2001: 39) these two principles with *prose/poetry* opposition (as mode of expression):

Jakobson distinguished two basic types of trope: metaphor and metonymy, and associated them with the two axes of language: the paradigmatic and the syntactic. [...] According to Jakobson a metaphor is a substitution of a concept along the paradigmatic axis, [...] and the establishment of a semantic link by similarity. A metonymy is disposed along the syntactic axis and is not a selection, but a combination [...] involving the establishment of a connection by contiguity. As regards the cultural function of rhetorical figures,

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<sup>9</sup> Architrave a beam in an Antient Greek temple's fronton.

Jakobson, on the one hand, broadens it, seeing there the basis for meaning-formation in any semiotic system [which is architectural language within my research]. So he applies the terms 'metaphor' and 'metonymy' to cinema, painting, psychoanalysis, and so on. On the other hand, he narrows it relegating metaphor to the domain of semiotic structures = poetry, and metonymy to the sphere of the text = prose.

The distinguishing of two main (and opposite) mechanisms of articulation starts from the work of Roman Jakobson about two types of aphasia (Jakobson 1990). Jakobson called these two aspects a *metaphor* and *metonymy*. He describes two aspects of human speech: **combination** and **selection**, which are "two faces of the same operation" (Jakobson 1990: 119). The combination implies that any sign is a constituent element in our speech: "[...] any linguistic unit at one and the same time serves as a context for simpler units and/or finds its own context in a more complex linguistic unit" (1990: 119). Selection, in its turn, "implies the possibility of substituting one for the other, equivalent in one respect and different in another." (1990: 119).

These two mechanisms, connected with brain functional asymmetry, allows us to formulated phrases by working together. Through the dysfunction of one of the brain hemispheres, Jakobson describes one function isolated from another: *metaphoric* pole as the **contiguity disorder**, and metonymical pole as the **similarity disorder**. He brings an example of synonyms choice to a word "hut" in both cases of speech disorder. In the case of contiguity disorder, i.e., in predominantly metaphorical thinking, patients selected following substituting words: "the tautology *hut*; the synonyms *cabin* and *hovel*; the antonyms *palace*; and the metaphors *den* and *burrow*" (Jakobson 1990: 129). In the opposite situation of similarity disorder, which stays for the metonymical pole, patients picked explanations: "To the stimulus *hut* one response was *burnt out*; another, *is a poor little house*," also there were such metonymical responses as *thatch*, *litter*, *poverty* (1990: 129).

In the first situation of the *metaphor* alike "hut=palace," the similarity is based on the inner object's characteristic, which means that the patient already had the idea of a "house." In this comparison, the person refers to the general idea in its diverse ways of development. Palace as well as hut and den, shares the same "house-ness". By selecting such *metaphorical* comparison, the person substitutes one notion by another because they share common inner meaning - semantics. In the second case of *metonymy*, the similarity is based on the context, on the specific situation. When the patient use the *metonymy* he does not substitute but rather

explains the given concept. However, he does not know the meaning of this concept unless he is aware of the word's context. Situations that do not correlate to the situation around this word would not mean anything for the person with purely metonymical thought, as the phrase "it's raining" without actual rain (Jakobson 1990: 121).

Considering the comparison of *metaphor/metonymy* and *prose/poetry*, one thought from Russian Formalism should also be considered, especially, due to connection of this movement with Roman Jakobson. Russian Formalists discussed the inseparability of *form/material*, but what stayed for these two sign aspects changes during the signification (pic.3). Juri Tynyanov introduced the notions of *rhythm* and *semantics* (Tynyanov, 2002: 177), each of which could occupy either *form* or *material* of the sign (so, he distinguishes *form/material* from *rhythm/semantics*, even if they look similar). The notion of ***rhythm*** covers the position in a structure, sign's relations with the context. The notion of ***semantics*** covers the inner meaning of the sign. Juri Tynyanov proposes two modes of expression: *poetry* and *prose*. In the case of ***poetry***, *rhythm* stays for the *form*, and *semantics* stays for the *content*. In the opposite situation of ***prose***, *semantics* takes the place of the *form*, and the *rhythm* takes the place of *content* (pic.3). He writes that *material* is an element that is subordinated to the *form*, i.e., *constructive factor*: "The rhythm in poetry will be such a core constructive factor, the semantic groups will be material in a broad sense; the semantic grouping (plot) in prose will be it [constructive factor], the rhythmic elements, in a broad sense of the word, will be the material." (Tynyanov, 2002: 177).

poetry:	
form (constructive factor)	meaning (content)
rhythm	semantics
prose:	
form (constructive factor)	meaning (content)
semantics	rhythm

Picture 3. The reconstruction of Tynyanov's description of poetry and prose (metaphor and metonymy accordingly).

The situation of *poetry*, where the *form* relates to *rhythm*, and *content* relates to *semantics*, I would like to call the *metaphor*. The reverse situation of *prose*, where *form* relates to *semantics*, and *content* relates to *rhythm*, I propose to call the *metonymy*. Therefore, it is not enough to say that ideas are expressed by *form/meaning* relation, it is also needs to be specified, what remains besides these sign aspects, in other words, is it *metaphorical* or *metonymical* sign.

For the *metaphor*, it is important to put together two concrete things – two objects, one of which substitutes the other. For instance, some distant object could be compared to a star in the sky, because the first distance is *as if* the other distance, somewhere “far” is meant to be to be as the distant thing. In this case, we substitute the “real” distance by the cosmic scale distance *metaphorically*. For the *metonymy*, the existence of any specific object does not matter, as long as it is an abstract description. In other words, if there is need to describe something that is far, one could ask: “how far is it?” The metonymy represents not the semantics of the distance but the situation it creates, in this case the distance could be expressed through the subject’s behaviour or mood. In the architectural *metonymy* it is possible to have two distant objects; besides, one of them can be a bit further than the other. Such spatial relation is impossible for the *metaphor* because all the far objects in it will represent the very idea of distance; thereby, the object could be either far or close.

At the same time, because the *metaphor* forms the meaning by the rhythmic constructive factor, it is focused on the linear expression. The *metonymy*, on the contrary, intends to form the structural relation by the inner meaning, it is oriented towards semantics. In other words, in *metaphor* the *semantics* is subdued to the *rhythm*, while in *metonymy* the *rhythm* is subordinated to the *semantics*. These two tendencies are better described in the example taken from painting, that is proposed below in the next chapter (Chapter 1.4).

In such way, people always combine *metaphorical* (selection through similarity) and *metonymical* (combination through contiguity) modes of speech. They combine one word with another, the meaning of which depends both on semantics and syntax. Nevertheless, in different texts, authors give preferences to one or another principle, according to epoch, country, successive styles, such as Bronze Age, Roman Empire, European Modern Age, and so on (Lotman, J. 2001: 40). For this reason, I will consider most specific pieces of architecture that represent each stage of language evolution. These stages are generated relative to the steps of progress in metaphorical, and later, in metonymical thinking.

#### 1.4 Limitation of subject: semiotics of the wall

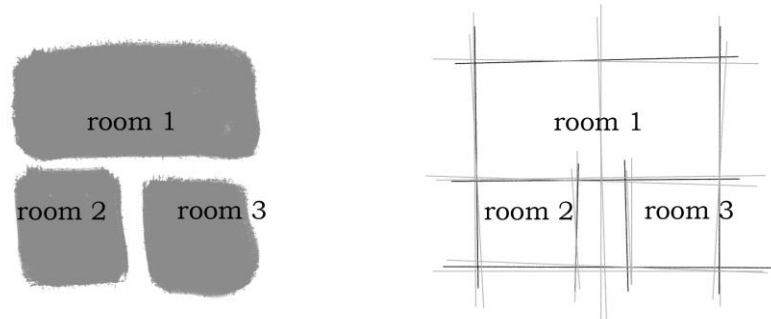
The research subject I am limiting the analysis by is the *wall* as a basic element of architecture. The wall is only one of the possible research objects. For example, the proposed method could also be applied to a column, stairs, vault, arch or even a beam. Some of these elements had been already considered in this research a bit due to the syncretism of the primal cultural stage, which generates the semantics of the architectural elements. However, the wall is an excellent research object because it is a representation of a boundary which is a central meaning-creating mechanism: the boundary refers to the untranslatability barrier, which is the main semiosis principle (Lotman, J. 2001).

I analyse the wall from the perspective of geometry, intentionally ignoring social aspects, such as political revolutions and cultural-scientific reformations. I am, first of all, focused on the meaning of the architectural elements, their semantics. As was mentioned before, I believe that elements still convey semantics, that determined their function. The meaning appeared before the application. Semantics of the elements also affect the way architects depict them, how they make design, as far as the project is concerned it is an articulation on this spatial architectural language.

When architect plans a room, he/she can draw (create, imagine) the room in two ways: he/she can either paint a solid smear, or draw several lines that outline the perimeter of the room (*pic.4*). In the first case, the walls depend both on the characteristics of the inner room's space and the outer space, as a paper sheet has two interconnected surfaces. The creation of the room goes along with the creation of the exterior. Space in this case is heterogeneous because inner and outer space are different, yet they define each other. The room and exterior pre-exist before their creation, because language determines them. By creating new smears, extending the building, architects always add one smear to another, completing the model. Any new piece of information is interwoven into this model, which implies that any new room is beforehand known. There is nothing outside of this world model, there is no absence of the things in the project. The *nothing* is impossible.

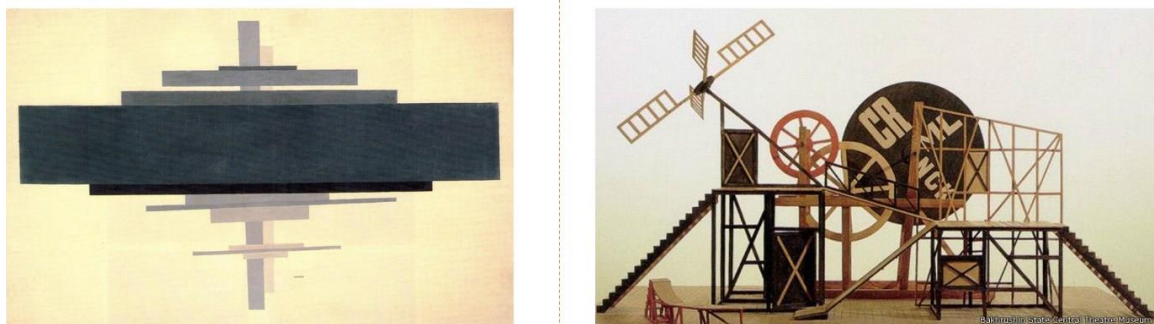
In the second case, if we draw the guidelines to outline the perimeter first, we separate already existing space (house) into several subordinate rooms. In this case, the line subdues the space of the room. Moreover, what was outer space later turns into the inner - exterior and interior are homogeneous. The room fills this empty, already existing space, it is adjusted to

the physical context. Therefore, before the linear order of the project there was no room, there was nothing. The *nothing* is possible.



Picture 4. Two ways to draw a room: Matisse line (on the left) and Cezanne line (on the right).

In the beginning of XX century, artists tried to overcome outdated figurative art. Selim Khan-Magomedov introduced two lines of avant-garde: Matisse line and Cezanne line (Khan-Magomedov 1996: 88). The Matisse line was represented by supremacism in architecture, Kazimit Malevich's work in particular. The second Cezanne line followed constructivist Vladimir Tatlin (*pic.5*). These approaches are opposite because they focused on the opposite directions - the Matisse is oriented towards the *semantics*, while Cezanne is focused on the *rhythm*.



Picture 5. Ilya Chashnik's work (on the left), Vladimir Tatlin's work (on the right).

These two lines are important, because they represent two tendencies that metaphor and metonymy establish. Even if the metaphor is based on the semantics, on the paradigmatic aspect of the sign, it forms this inner meaning by the rhythmic constructive factor (*pic.3*). The

metaphor is based on the selection. It implies that one sign is to be chosen according to particular context. This action influences the meaning of the sign: some similar notions become distinct after some time. It is a selective and separating nature of metaphor - it brings similar signs together and highlights differences among them. Therefore, I suppose that metaphors engender the Cezanne line. At the end, this explains the alternations between poetic and prosaic cultural epochs (Lotman, J. 2001). In its turn, when the logic of Cezanne line exhausts itself, there appears the opposite Matisse line, which happens on the stage of *metonymy*. *Metonymies* form structural element by the semantic constructive factor (*pic.3*). Different elements that are put together allows us to see commonality, that is based on the forgotten semantics.

Starting from *metaphor*, these two language aspects (*metaphor* and *metonymy*) evolve together influencing and changing each other. The expansion of one period is the decline of opposite one, according to the syntagmatic and paradigmatic axes. Matisse line leads arts to the new *metaphor*, while Cezanne line brings us to the *metonymy*.

## **2. Analysis of the architectural materials and result**

### **2.1 The wall as a room enclosure**

Louis Kahn writes that “the room is the beginning of architecture” (Kahn, 2003: 253), but what is the room? Firstly, it is an individual space that is enclosed by the walls. Furthermore, rooms also serve some purpose; consequently, we have a set of various functions: kitchen, bedroom, workshop, etc. However, the main characteristic of a room is its ability to receive and host a human within, the room is an embodiment of human life, Kahn says that the room “is the place of the mind” (2003: 253). In a such way, geometrically, the room is a limited area with no centre because it, foremost, separates the world on the inner and outer.

The pair inner/outer represents two spheres that are opposite and complementary to each other at the same time: it is simultaneously approval of one statement and denial of the other. It is quite a basic thought, that existence of a thesis implies the existence of antithesis. However, the opposing of inner and outer does not explain how some space becomes interior and another remains as exterior. One can assume that inner/outer quality depends on subjective location and view point. For example, inner is the space containing a living being within, it is a safe, warm place, while outer space is dangerous and hostile, outside of the interior. This assumption, though, erases the difference between two conditions at all, because in that case they are formulated in a similar way, especially, when people erect new building that turns “outside” into “inside”, and space appears as a homogeneous matter. In a similar way, one would say that people started to build houses because they wanted to solve utilitarian (practical, functional) problems of comfort and security, which are comprehensible to a modern person. However, the result of such activity could hardly be called architecture.



By reaction, it is impossible to explain all that great variety that people create in architecture and in art in general.

One could continue this discussion and suppose that living beings during their life simply solve problems as they appear, which engenders stimuli-reaction logic. It is possible on this level to distinguish the cold from warm, hungry from full, alive from dead, but it is problematic to formulate the very understanding what these conditions mean. The ability to distinguish two conditions implies the existence of some goal, for example, to live, but does not explain its meaning and origin.

The essence of any condition can be perceived if a person simultaneously keeps in mind the condition opposite to it as well. As an instance, we can comprehend life only realising our own mortality: “They [people] are called mortal, because they are able to die<sup>10</sup>.” writes Heidegger<sup>11</sup> (Heidegger 1993: 324). Through their life people realise the principle of Being, they *are*. Only through realising the essence of life process, it becomes possible to create dwelling, not simply shelters: “To be a human being means to be on the earth as a mortal. It means to dwell” (Heidegger 1997: 96). Andrei Zubov writes that religion masters the death, not adapts to it: “religion is the connection of the finite with the infinite, man with God, which goal is to give the infinite qualities to the finite, the divine qualities to the human. Faith is an inherent companion of consciousness.” (Zubov 1997: 35). Therefore, any artefact including architecture, is the products of reflection of our existence, its comprehension. Informational transmission, which is considered as a sign’s function, appears only afterwards, but it is never the reason of sign creation. Any condition people experience is movement (reflection) because the very existence actualises in the process of life, in movement, there is nothing stable, final, or settled: “We do not dwell because we have built, but we build and have built because we dwell, that is, because we are dwellers.” (Heidegger 1997: 97).

In such a way, the division of space on the inner and outer is rooted in the human ability to enter another domain; as the basic one, the domain of life. “What can be more natural and more vital than a need for clothes or a home? And yet this need was comprehended through the idea of the cosmic nature of the covering and the comparison of

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<sup>10</sup> Heidegger also distinguishes a dead person from a stiff organism.

<sup>11</sup> He says: “Death is a shrine of Nothing. [...] Death as the shrine of Nothing keeps the essentiality of Being.” (Heidegger 1993: 324). Considering the meaning of Nothing, he writes that Existence exists as denial of Nothing, the nothingness of Nothing predetermines our Being.

the tent with the sky, the room with the underworld.” writes Olga Freidenberg (Freidenberg 1997: 55), which impels that the inner space of the room begins with a tomb. Therefore, the essence of the interior could be perceived that the room entering is dying and that the exiting the room is awaking or birth - the change implies the end of one state and the beginning of the other state.

One of the first archaeological building remains of human culture that we have are burials. This is not architecture yet, but it definitely conveys meaning for the future buildings. The burial is an embodiment of human's state, they represent the very first comprehension of life and afterlife (Maringer 1960). Grains, that archaeologists find in the mouth of the deceased people or around them (Zubov 1997: 49), means that deceased people were engaged into life. The grain is one of the representations of life and birth (rebirth), as well as food and eating. Therefore, the grains in burials could be understood as a wish for deceased to have eternal life. For us, the formulation of this wish is important: the person was not given the food for the afterlife trip, rather he/she was put in the process of eating the bread, which is equal to being alive.

With this holistic approach, architecture does not have such characteristics as longitude/width, large/small, but rather space of the building volume is described in its solidness: the room, as the primal architectural element, **is** a grave, it does not resemble it (as grains do not symbolise life, but they *are* life). This means one room would not be bigger than another one; they are equal (metatextual *one-ness*, Chapter 1.2); even if the modern man sees the difference in proportions. The chaotically placed cave paintings could be supportive of this thought (*pic.6*). Depicted animalistic figures are disproportionate, the heads there too big in comparison to small legs; sometimes the body is too stretched out, in another case only fragments of the animal are painted (like bear heads). Nevertheless, all these pictures have very distinctive features, from which the painted species can be defined.

The cave paintings also overlap each other very often, which means it did not interfere the author's perception. The modern viewer would perceive this composition rather as a mistake because we used to formulate our speech linearly and organise drawings, that implies spatial co-dependencies, while in the cave painting there are no such outer relations. It means, Palaeolithic authors pursued another aim: if we relay some information, and information transfers, the meaning could be considered as a function of the message. As for the prehistoric author, that is engaged by thoughts expression and does not care for any further readings. It

also should be mentioned, that some cave chambers with paintings were found in hard-to-reach areas or even sealed off by a massive stone. We can conclude, that Palaeolithic caves were not a sort of pinacothèque.



*Picture 6. The cave painting in Chauvet Cave in southern France.*

In a similar way, the aim of the Palaeolithic buildings is not to shelter a human but to depict a world model. People are themselves parts of this model, as well as construction elements, that is why on this stage there are no separately standing walls, but only walls as rooms' attribute. In general, the yearning for the creation of something starts with the aspiration to reaffirm one's own existence; for example, while talking with another person, we, by addressing him, convey that he and we exist. When we say "Me-You" we, at the same time, establish the existence of the dialogue participants (Uspensky, 2013). By building a house, we also state our existence.

Umberto Eco describes the form of cave vault as the visual image (in general sense) that gave the idea of the house to the first people. He claims that regular cave visits with an aim to take shelter established in the human mind the image of a dwelling, according to which, people continued to build their houses. It means, that function established the meaning of the object. I cannot agree with him because to comprehend any idea, to recognise the object, a person has to form a category, foremost. For example, to recognise a house one has to know what is "house-ness." It would be better to say that the category does not appear first and then people fill it with an object – both category and its objects appear at the same time, as *signifier/signified*.

Thereby, the wall has appeared in human culture not as functional separation, but it was preceded by the image of change. Change is always a rebirth, and architecture of the room with walls is an embodiment of one of the states that is to be changed. Therefore, the wall itself (as separately staying object), as well as the house (or shelter) are unthinkable.

### 2.1.1 Before the wall

Geometry of pre-historic (Palaeolithic – early Neolithic) buildings comes to the fact that every *text* here is a part of the whole: “Paradoxically, the mythological world is a one-rank world in the sense of a logical hierarchy, but it is highly hierarchical on the plane of semantic value; it cannot be broken up into markers, but it can be broken up, to extraordinary degree, into parts (component material pieces);” (Lotman, Uspensky 1978: 213). The archaic text consists of several parts, which influence each other, like an organism, but they are independent from each other. The only thing they subordinate is the whole. For example, Vladimir Toporov describes the Vedic myth about a cosmic man Purusha<sup>12</sup>, who was sacrificed by gods, and whose divided body parts formed our world entities: water, air, wind, ground, the sun, animals and people, including their social organisation (Toporov, 2010b: 232). Toporov writes, that archaic mythopoetic period: “proceeds from the identity [...] of the macrocosm and microcosm, nature and man. The man as such is one of the extreme hypostases of the cosmological scheme. His constitution, his flesh, goes back to the cosmic matter, which, being embodied, formed the basis of the elements and natural objects”<sup>13</sup> (Toporov, 2010a: 29). Life is perceived as a highly heterogeneous essence.

Another feature of the archaic art is that the text remodels the metatext; they are isomorphic to each other. In this connection, the first proto-building, the grave, in which a body is laid to rest, depicts the womb, where a yet unborn human sleeps. The tomb does not have a separately-erected wall, but it has a side surface of the excavated pit. This earthen surface belongs to the grave as artificial object, because the rest of the earth mass is untouched. As the wombs are oval, so are the tombs oval and deepened into the ground. The

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<sup>12</sup> The myth about Purusha is a proto-text, which was reflected in many archaic texts about the World creation, where the God-Demiurge quarrels with his Son and overthrows him to the earth to sacrifice him and divide into parts with the following establishment of the life-death-resurrection circle. (Toporov 2010b: 236)

<sup>13</sup> “[...] flesh - earth, blood - water, hair - plants, bones - stone, sight (eyes) - sun, hearing (ears) - cardinal directions, breath (soul) - the wind, the head - the sky, the different parts of the body - different social groups, etc.” (Toporov 2010a: 30)

resemblance was achieved in different ways, such as an embryo pose - deceased people were laid on their sides, with their heads pressed to their chests and with bent knees. One hand was also often below the head, like a sleeping person would hold it: "The men of the last ice age buried their dead evidently believing in a physical afterlife. They, too, it seems, regarded the dead as 'living corpses'. As in earlier times, the dead were often buried in the dwelling caves where they had lived, so that they might remain in familiar surroundings. Grave pits were carefully dug in cave floors, and the corpse deposited either in a 'sleeping position' - on its side, on its back - or crouching." (Maringer 1960: 50). This person was sleeping, which implies he/she will wake up. The meaning of the first building is in the form, in the appearance of their content.

Any utilitarian explanation is impossible because the needs themselves have not formed. Every building is a single room, solid and impartible. The separation by the function usage will happen later in late Neolithic. The function appears from the interaction of the room with its surrounding, the situation, i.e., it appears from the context, but these pre-pottery rooms are unaware of the context, they do not react to the outer buildings. Of course, there is a reaction to the Sun trajectory, the single-room buildings orientation along the axis Southeast-Northwest, but this axis is perceived not as a direction but the implication to the Sun. The born human is the Sun, and his new room, deepened into the ground, like the horizon where the Sun sets and where it rebirths from. On this primal stage, the wall obtains its main meaning - the image of the change. The person, entering the room, changes his/her condition, like the Sun descending to the Underworld.

The *image* of the after-life was also depicted in everyday-life attributes, such as stone tools, weapons, jewellery, deceased were supplied in their journey with. Deceased people also "[...] were often interred in thick layers of ochre. With its reddish tint reminiscent of blood, this seems to have been placed there to provide the pallid corpse with a lifelike hue" (Maringer 1960: 51). The Palaeolithic people aspired to oneness, identity, not the similarity. In the same way, Neolithic people put the grains into dead person's mouth with attempt to make him/her alive, because eating is the attribute of life.

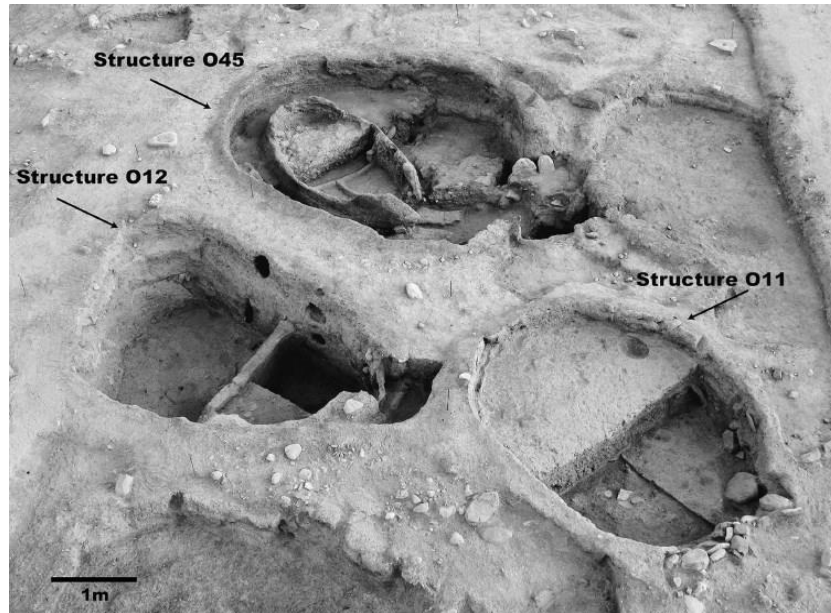
In Southwest Asia, Southern Jordan, there were archaeological excavations of pre-pottery settlement of Neolithic A (the earliest among A, B, and C) period (Mithen et al., 2015). This settlement looks like a chaotically assembled number of room-liked dwellings. In general, the size of these rooms ranges from 3 and 4 to 5 meters in length. Sometimes these

rooms touch each other, sometimes they overlap. Some of the rooms are dug right into the previous ones, that reminds us of the logic of cave paintings (*pic.6*) where the pictures also overlap each other and were repeatedly reproduced on the endless vault's surface. The surface in the cave paintings was perceived as something that does not have edges, unlike modern graphic art where people always think about the paper sheet format and its composition. The paper format is already a result of a long cultural evolution; we are used to the fact that information is given to us in portions, linearly, according to a structure. In Palaeolithic caves, as well as in Neolithic A settlements master plan, all the attention is focused on the object itself, not on the spatial arrangement.

Besides this, there is another regularity: all the rooms are oriented towards the Southeast along the length. The Southeast part of the room is separated by the T-shaped partitions (*pic.7*). This T-like shape itself, as well as the oval outline resembles caved image of the vulva, for instance, as one (*pic.8*) in La Ferrassie cave in France (Hitchcock, 2017). Besides it, these rooms are oriented towards the sunrise, that allows us to compare the sunrise with the birth. Keeping in mind that the room also serves as a burial, and the deceased person is not dead but have to be reborn in new life, we can conclude, that the exiting room was the equivalent of the birth. The rooms were used both for living and burying: "This is best seen through the manner in which the dead continued to be part of the settlement through careful choreography of burials, the treatment of the human remains, and the repeatedly changing architectural make-up of the settlement the burials were positioned within." (Mithen, et al., 2015: 82). The exiting person is the rising sun, born baby, resurrected man; the room is a tomb (Freidenberg 1997: 55), the tomb is a womb (Zubov 1997: 50). If it is true, we can imagine the world of primitive man; this proto-architecture of metatext does not have a wall, the proto-wall is an inseparable part of a womb that gives birth for a people.

Because the abstract thinking had not been developed yet, people did not organize dwellings and burials according to some second-level order (language): they did not arrange buildings-rooms in a circle or in rows. During that archaic mythological period people thought with concrete images (Freidenberg 1998). It also meant that the initial meaning of a room as human receptacle did not obtain any additional meaning from the context. The proto-wall in this model is the body of the room: the wall is its part like the line in the cave paintings. The rest of the space is undefined, unstructured chaos. Only after people developed

the understanding of the wall as the change of condition, it becomes possible to distinguish *idea*<sup>14</sup> of it, which is a separation, deprived of the inner state.



*Picture 7. Pre-pottery Neolithic A burials in Wadi Faynan, Southern Jordan.*

In spite of the fact that the wall physically separates a human body from the outside environment, it is not the same as the separation in the modern world. The room in the early Neolithic A models the border between life and death. The outer world (a forest, unexplored territories) as boundless and unshaped, as territory of the Jordan settlement and cave vault - they are unmeasured, unnamed. This outer world belongs to the domain of living beings, it does not oppose anything within this domain. That is why the primitive man does not build fences, as well as he/she does not build villages (as socially organised settlements), and often he/she nomadizes and eats wild crops and quarry. The formulation of the idea of boundary and separation of inner and outer (within the Upperworld), this boundary will appear later in pottery of the Neolithic.

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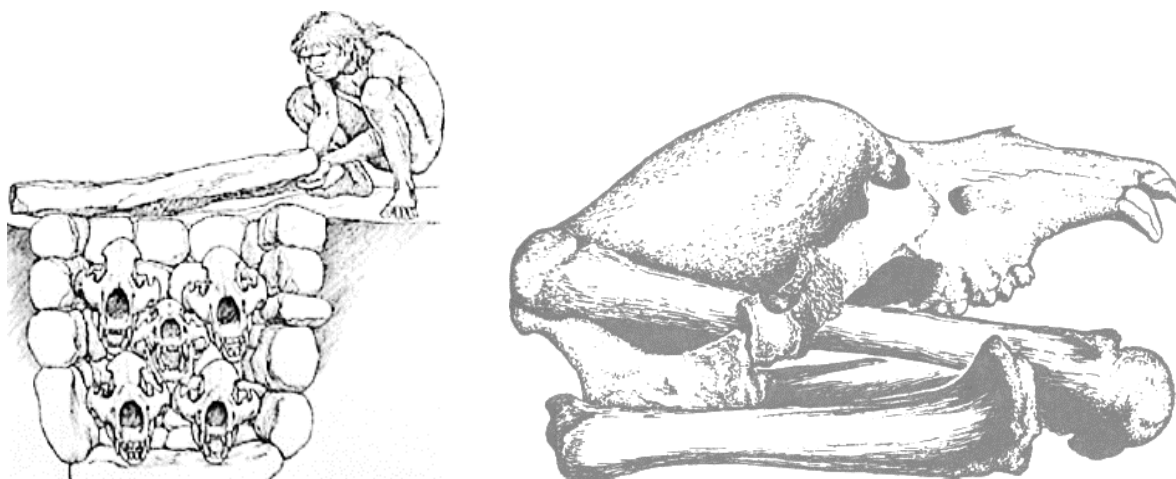
<sup>14</sup> The *idea* of a wall is described in the chapter 2.2.



*Picture 8. Curved images of vulva in La Ferrassie, France.*

One of the first walls erected by man is situated in the cave Drachenloch in Switzerland. This cave is famous due to its bear cult, here were found traces of the human camp - hearths and animal bones, paintings and sanctities (Maringer 1960; Zubov 1997). The Drachenloch wall separates the bear remains from the rest of the cave interior (Zubov 1997: 54). There was also a structure that looked like a stone chamber, closed off by a slab above, containing bear skulls (*pic.9*). We know that people ate bears that they worshiped. That is why there appeared a popular theory that the chamber could have serve as a meat storage, especially considering the low temperatures inside the caves. However, all the remains were oriented to the cave's entrance, that was quite specific (Zubov 1997: 54). The skeletons were also incomplete, that shows that bear carcass had not decomposed naturally, but the muscles were removed from the bone, after which, the bones were arranged anew. Only the most important, i.e. significant bones were arranged behind the wall. Besides that, the bear skeletons were laid so close to each other, that there is no doubt that there was no flesh between them when they were arranged over the wall. In its turn, besides the bear meat, Palaeolithic people also (and quite often) ate grazing animals and rodents, their remains were scattered around the hearth, while bears' bones were laid accurately and consciously (1997: 54). We also should keep in mind that such a large animal as the sabretooth bear was very difficult to hunt. Especially, the fact that people ate small and less harmful animals makes unconvincing the explanation that the bear hunt had only utilitarian reasons. This all means that Palaeolithic people treated bears with special respect, and this cult is connected with the first wall (Zubov 1997).





Picture 9. Reconstruction of the stone chamber in Drachenloch (left), Bear sculp with penetrating bones, Drachenloch (right).

It was important to show the separated objects that belonged to these opposite domains because there was no the idea of separation<sup>15</sup>. In other words, in Palaeolithic period, not the wall was important but the objects on both sides of it. These objects were presented in Drachenloch chamber - scattered bones of "useful" animals and arranged "sacred" animal bones. These bones belonged to two opposite domains - life and death, divine and earthy. Small, useful, harmless animals were regular food, while the other dangerous animals posed a threat of death, belonged to the domain of afterlife: "[...] not the cult of the bear was the result of hunting, but the hunt for the bear was the result of the cult." (Zubov 1997: 56). The cave wall signified the difference between one domain and the other, which are connected by a possible transfer - the change of condition. In this way, the wall as an *image* did not belong to any of the domains, but rather it represented the transfer.

Bears' bones were arranged, which meant that they were signified, or formed; for some reason it was important for the people, what happens to those bones after the meal. That also implied that the meal itself was significant. It was uncommon and had additional meaning besides the satiety, because the rodents' insignificant bones were scattered. It meant the partaking of their meat differed in those two cases. Such regular food as rabbit was an attribute of life, it was a subsidiary element. What was also worthy of attention, the rodents were never depicted on the cave vaults. If the grain, that was perceived later, in Neolithic as a

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<sup>15</sup> Separation is an abstract concept that is based on the spatial relation between objects, while these objects are in the same domain.

sign of re-birth, implied the transfer between two domains, the rodents belonged only to the domain of life. Staying within one domain, this food was not opposed to anything from the outside.

By assembling the wall, the Palaeolithic people had isolated themselves from the horrendous world of death, being aware of it. This artificial wall is an image of passing to the afterlife, to the other state and the impossibility to return back, because the wall is impenetrable. Only now we have several walls and doors, within our houses, several fences and borders, which we cross in any direction. The Palaeolithic people had only one boundary - it was the edge between two domains of life and afterlife.

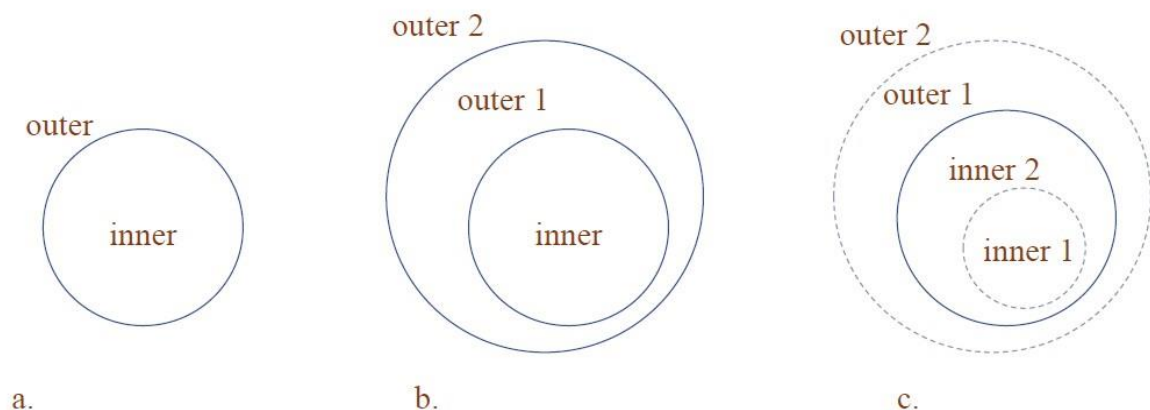
### 2.1.2 Altar and centre

In the Bronze Age people start to formulate *ideas*. As the *images* have been created according to the *metatextual* rule, the *ideas* are the signs expressed accordingly to the *metalanguage*. Olga Freidenberg (Freidenberg 1998: 232) elaborated this transition:

“Mythological images began to disappear not because people stopped believing in myths, but because within the very image that reflected the structure of human consciousness a gap appeared between what the image was intended to communicate and the means of its communication. In this regard the history of ancient ideologies is the history of overcoming the concrete-image element. Greece begins this process; Rome finishes it”

As was written above, for the myth-creation period there was no separately-standing wall, any wall **remodelled** the *image* of the life-death relation. However, for the period of the thinking with *ideas*, the wall **resembles** the source meaning - myth; *ideas* were similar but not identical to the myth aspects: “[...] in any ancient metaphor, the initial meaning is connected to the concrete semantics of the mythological image and represents its conceptual duplicate” (Freidenberg 1998: 243). It implies, that the *semantics* of the *ideas* refer to the archaic image of the sign, yet now it is formed by the *rhythmic constructive factor*, in the *metaphors* case (in case of *metonymies*, the *rhythm* is formed by the archaic *semantics*). It created the gap (Freidenberg 1998) between the sign content and its articulation. As a result, in the Bronze Age appears the plurality of created objects, which engenders spatial relations, and signs begin to influence each other. The belonging to the *metalanguage* allows *ideas* to use abstract concepts for the signification, which does not touch the inner meaning.

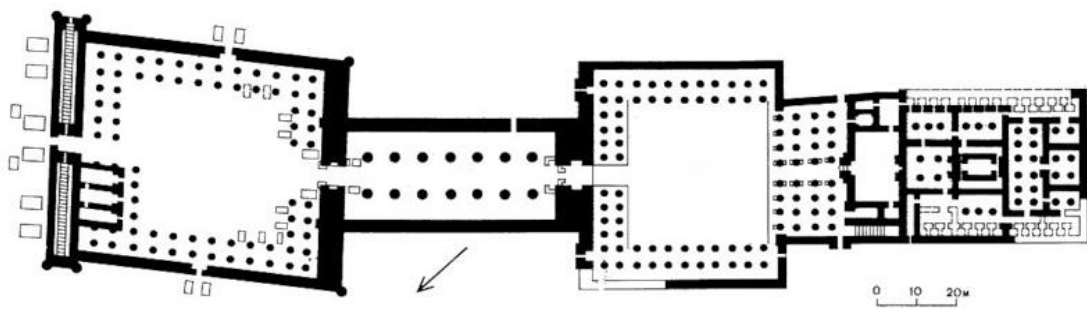
Palaeolithic world consisted of two domains of life and afterlife. To become closer to the divine afterlife people reflected that domain into the earthly life hood. Andrey Zubov writes about human aspiration to make the gods closer: “Assimilating the created image to the Creator, the artist, in the only possible way, demonstrated the likeness of the creature, the likeness of a man to his Creator. The man - is the image of God, he wanted to say giving the image of a human form to the non-figurative Creator.” (Zubov 1997: 123). In the same way humans made the gods closer to them by reflecting their everyday life into the domain of afterlife. As a result, we have good and bad gods: “[...] in real cultural texts there is a wide representation not only of the opposition of the world of the living and the world of dead (or gods’ world), but also the separation of gods into kind ones and evil ones” (Lotman, J. 1992b: 396). Such cross-reflecting mirrored the dualistic structure of life/afterlife in both life and afterlife domains: the borderline separating life and afterlife was reflected once more on both domains. Juri Lotman described this process of the borderline reflection: “In a very wide range of texts there is an aspiration to identify the inner world with the earthly world, and the external world with the heavenly, otherworldly, afterlife. [...] The complication of the model appears in mutual overlapping of opposition inner-outer [...]” (Lotman, J. 1992b: 395). He brings two examples, where either inner or outer world is divided by the borderline. However, I think, that there are not three layers but four (*pic. 10*), so the borderline reflects into both the inner and the outer domains.



Picture 10. The division on inner/outer space in mythological period - a; the reconstruction of scheme proposed by Juri Lotman - b, the reflected division into inner/outer proposed in my research - c.

In the Neolithic period, the separation on the sacral and profane space appears in the culture. Both of these spatial types belong to our earthly world. What is also important, the

God's appearance changes from the animalistic to anthropomorphic one, what happened in Çatalhöyük, according to Andrei Zubov (Zubov 1997: 123). It supports the thought of a man as God's imprint, humans made God closer by assigning anthropomorphic features to Him (Heidegger 1993; Zubov 1997). This God's place on the earth is the altar. The altar could be represented as a table, or stone, or mortar, that further obtained walls around it. A temple, in its turn, is the container of the place of God on the earth. For example, in Ancient Egypt was a popular tradition to attach buildings to existing temples. As a result, we can see long chains of halls strung on the central altar axis (pic.11). These new halls always were attached on the Western side, so the altar was the most Eastern point of the complex. The sacral, saint chamber was this last one, that was adjacent to the Eastern wall. In such a way, every new room was a container of the all the previous ones.



Picture 11. Amun-Re temple in Karnak.

However, what is peculiar, the altar room, the sanctuary, contained the ark with the sanctity itself. It means, that the shrine is the first veil, while the sanctuary's walls are the second veil of the sanctity. Besides that, the ark in Egypt was also covered by the baldachin, while the whole structure was placed onto the boat (*pic.12*). The boat represented the transfer from the domain of life to the domain of afterlife: "As the shrine of nothing, death harbours within itself the presencing of Being. As the shrine of Nothing, death is the shelter of Being" (Heidegger 1993: 324). Adolf Erman (Erman, 2008: 139) describes this reflection of sanctity sacredness on to the ark:

This vessel was carried in circles in a celebratory procession during major holidays and for the outer world it itself was the avatar of god. In itself this was not unusual, other people used in their cultures an altar or a god's parade chariot. That was what the

peasants saw, this eventually replaced for them the visage of a god. For Egyptians in particular this was a vessel. The Egyptians always perceived travel as a journey by boat through the river Nile, and that is why by gods logic, to move from one place to another, a Nile vessel is also required.

Container as a *metaphor* substitutes its content, because the meaning of the sanctuary (as the image of God) is in the *semantics* of the shrine. The *form* of the shrine, its *rhythm* expresses the *semantics*: to make the holy belonging to the sacral space, walls have to isolate it, to restrict the access. The container follows the idea, because it **surrounds** the sanctuaries, as walls surround the altar, distancing from its contents. Following the *rhythmic constructive factor*, walls in *metaphors* surround the **centre** - the mediated *image* of the room (as part of divine domain). Palaeolithic people did not know the centre as we do - their dwellings and painting were disorganised, in modern understanding. The *idea* of centre engendered the form of the vertical axis.



Picture 12. Model of a funerary boat found in Egypt (left), Vessel in shrine, Temple of Edfu, Egypt (right).

The Neolithic representation of connection between life and afterlife was a vertical axis, in other words, the World Tree. The World Tree, the Centre of the world has endless number of interpretations (Toporov, 2010a), but what is important is that it has all the layers of the religious organisation of human life. This world axis is a cross-section of the boundaries structure (*pic.10c*). God-man belongs to the “outer 1” sphere, the altar stays in the “inner 2” sphere. The ark represents the boundary between “outer 1” and “inner 2”, while the walls of the temple represent the boundary between the “inner 1” and “inner 2”.

The appearance of the *idea* of the World Tree is connected with the Neolithic, the culture of big stones, also known as Megalithic. Massive standing stones were spread all over the world: people erected them in Africa, Eurasia, both Americas and the Pacific region. A single vertical stone, called menhir (Brittonic *maen* - “stone” and *hîr* - “long”), signifies the world axis and also is affixed to the identity of the tribe. Like the ark substitutes the sanctity, the menhir substitutes the God and masculinity (Toporov 2010 a; Zubov 1997). The idea of the fixation of identity is significant because the erection of the huge stone was only possible with the aid of the settled agriculture - it required a lot of human effort, what was impossible in nomadic life. The people began to identify themselves with the location, territory, piece of land, that was transformed to the metaphor about identity with a piece of soil (Lotman, Uspensky 1992a: 64). The appearance of menhirs is geometrically significant because, for the first time, people have a possibility to measure the world with a coordinate system. The availability of the origin point allows to correlate real objects with their spatial position, to ascribe new characteristics.

The walls following their *idea* of separation and isolation are built according to guidelines with a Cezanne approach. These guiding lines are the shortest distance between two points in space; the metatextual thought did not have such abstract points<sup>16</sup> in space. The guiding vector, which is a projection of a plane, appeared from the repetition of events. For example, the Sun, even if it is the image of the life, justice and birth, every day follows the same route<sup>17</sup>. According to this pattern people developed the spatial language. The sign appears as a part of complexly organized systems, which in part influence each other in conformity with the supreme goal. Every sign belongs to its level and corresponds to the level's functions. Sign's semantics is subdued to the rhythm.

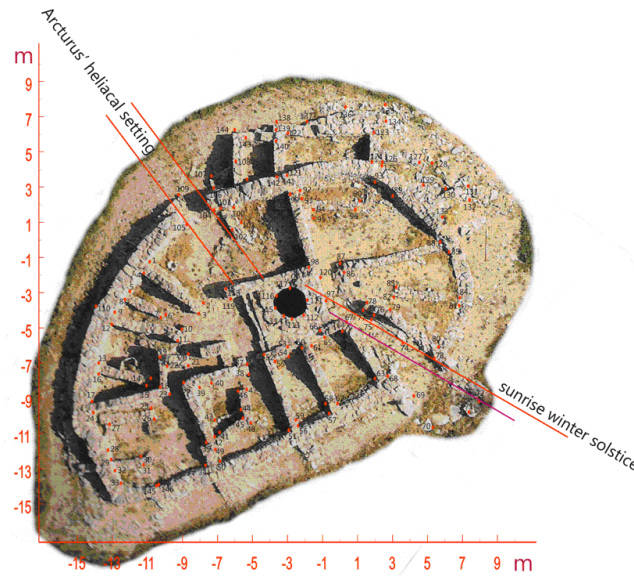
The wall now is built rather as a plane following the vector on the plan, a direction. As a result, walls became rectangular, regular, straight. Megalithic structures, tumuli, have a

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<sup>16</sup> The material point from Classical physics (before the quantum theory) where the object (including atoms) were considered as an abstract point to describe the force influencing it. From this perspective the inner qualities of the object are not important.

<sup>17</sup> In Egyptian myth about Apep and the Sun god. Ra every night goes to the Underworld where he defeat Apep, the Lord of Darknes (Bane, 2012: 43). It means that there is a possibility that the Sun can lose and Apep will eat the Sun and it will never arise. For this case the Egyptian priests prepared spells to defeat Apep: “The Book of Overthrowing Apep is a definitive guide to fighting him.” (Bane, 2012: 43). This discourse bases on the one canon of *metatext*. The *metalinguistic* description would describe the sun traectory by wich the Sun always arise because the Earth rotates around its axis, it is a question for physics. For the myth the Ra's power to overthrow the Lord of Darknes is the essential matter.

round shape in exterior and a central burial chamber, but inside of the mould there are straight corridors. These corridors are traces of the celestial bodies, such as the Sun in its most significant positions - winter or summer solstice, vernal and autumn equinox. Late Neolithic dwellings as well had guiding lines pointing to most important cosmic marks (*pic.13*).



Picture 13. The picture illustrates directions of celestial bodies reflected in early Neolithic dwelling structure.

In the Bronze Age the room becomes rectangular, mediated; its wall follows the logic of delineation of the perimeter, not the recreation of some myth. The room loses its meaning of the womb or tomb, it loses its oval shape as well as orientation towards East-West. The walls also lose their connection with the content and become right-angled. The new thinking is turned towards the reproduction of a thing, towards the method of production because the articulation is separated from the *semantics*, the form and content of the sign do not coincide anymore. Like ceramist creates void when he/she sculpts a jug (Heidegger 1971), a builder creates the same void by erecting a regular perimeter, which the dwellers later fill. The jug is not an offering itself, likewise the room as a container is not the birth itself. Thus, the room becomes not as much an imprint of human life, but rather the reflection of human household.



## 2.2 The wall as a boundary

The *boundary* is an *idea*, which does not always imply the *wall*. The *wall* is a specific structure in architecture, which transfers from one mode of creation to another<sup>18</sup>. The wall's shape is always a question of a signification mode: it could be represented by the *image* or *idea*. The boundary, in its turn, is an attribute of *metalinguistic* description only. If the wall is a material object, then the boundary is an abstract concept that needs to be expressed. This concept is similar to some abstract line or a plane that separates two areas - inner and outer. It can be immaterial as a border between two countries, or a partition, a fence, a fortress that occupies some area and volume in space. In that case, the boundary will coincide with the *wall*.

The *boundary* is a spatial notion; it appears only due to relations between objects. However, the non-mediated *image* precedes it, like any *idea*. Before the formulation of the *idea* of the *boundary*, there existed an *image* of difference between two opposite conditions, a confrontation, such as day and night, for example. The difference between them is not described through the parameters but through the experiencing. Only nowadays we can say that day is a bright daytime, and night is a dark one because we have formulated the parameters of darkness and brightness. Initially, this difference was expressed through the belonging to the day's or night's domain: rituals and their attributes were this domain. For example, Shumerian god Marduk was a god of Sun and Justice, which shows that the daylight determines specific code of conduct. Heidegger writes that, initially, in Greek language the "truth" meant "disclosure", "light gleam", that roots in the image of the Sun illuminating the earth (Heidegger, 2011: 35). In Semitic cultures there are many differences in ritual regulations for the day and night time (Encyclopaedia Judaica, 2008). In the similar way, in modern Muslim cultures the night-time brings indulgencies in food related ritual restrictions (Ashim, 2017), that goes is reflected into custom to drink alcohol (which is forbidden by the religion) inside the building or at least under a roof to avoid the "divine gaze". One could either belong to the domain of light or the domain of darkness by his/her very existence; the physical *boundary* between two conditions is absent. However, the premise of the *boundary* appeared from the impossibility to overcome the difference between two opposite conditions.

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<sup>18</sup> Like a genre in literature, which Tynyanov describes as an unstable literary phenomena. He writes that the genres in literature always changes, they have to change to exist. (Tynyanov, 2002: 169)



The *boundary*, as an *idea*, was formulated in the period of settled agriculture in the Neolithic age, because only by having an affixed point in space, people could surround or contain it with walls. This point was for example the menhir, mentioned before (Chapter 2.1.2). This fixed point was not only house's centre, but also the centre of people's life; they associated themselves with the particular place, they themselves were the place. In this way, the idea of the centre was an abstract category people used to depict a person, like the pronouns *me-you* that replaced the individual name by a universal term. From this descriptive formulation arose the universal understanding of the centre that did not depend on sign's appearance but relied on contextual relations and a system.

The *idea* of a *centre* like the *idea* of *boundary* belongs to the level of an abstract language. As far as the meaning of the centre depends on its spatial position, it can exist only coupled with the periphery. Periphery, in its turn, is that area where centre's influence weakens, which means another, external influence appears. On the other hand, to formulate the essence of this external influence, we have to identify its ideological centre; this means that periphery needs centre as centre needs periphery. Consequently, several centres outlined by a peripheral boundary appeared in the world; and besides it, this boundary was not a line of restriction but rather a plane of mutual exchange. There was no exchange through the wall-as-a-room, on the contrary, that wall is lock on itself. The wall-as-a-boundary has, firstly, an element of the duplicated centre, and secondly, this wall looks outside, it seeks a contact with the environment.

The boundary is the *idea*: the wall which structure is formed according to the *idea* is the boundary, it is a separately-standing object. The wall-as-the-room was not the boundary but the part of the solid model. The wall-boundary separates inner and outer areas, but it belongs to both of them at the same time. Yawein (Yawein 1987: 7) proposes the understanding of a boundary as:

Multitude of points, that simultaneously are attached to a minimum of two spaces. Using this definition as a base, allows to discern two types of borders, depending on that if the spaces touch each other in separate points or If the intersections are themselves spaces or material objects. In the latter case the border on a certain level can be again perceived as a new space, with its own borders. As a result, the architectural elements or spaces, whose borders are specially organized, can themselves serve as borders between spaces of a higher order.

This thought illustrates that the *idea* of the wall that has two approaches: *metaphor* and *metonymy*. Once again these two approaches are characterised by the relation between pairs *form/material* and *rhythm/semantics* (pic.3). The *material* of the boundary is a meaning that is to be expressed by the *form* (the sign's appearance). The *semantics* of the wall-as-boundary refers to the **difference** between outer and inner spaces, such as cold and warmth. The *rhythm* of boundary refers to the **separation** of any two areas.

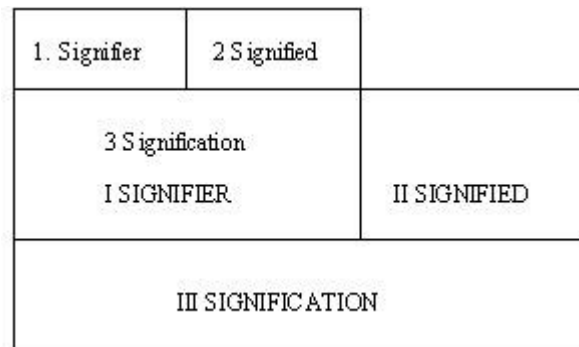
Therefore, when the *material* is the *semantics*, the sign (*metaphor*) represents the *idea* "to contain the centre" within the walls. The semantics of **difference** (*material*) is expressed by the rhythmic **separation** (*from*); the walls create a container to keep the inner area - the centre - separate from the outer space (Chapter 2.1.2). To show the difference between two areas, the architect has to divide them. When the *material* is the *rhythm*, the sign (*metonymy*) represents the *idea* "to surround the centre" by the walls. The *rhythm* of **separation** (*material*) is expressed through the *semantic difference* (*form*) between inner and outer. To show the separation, the architects must show the heterogeneity of the separated (inner and outer) spaces. Therefore, the *metaphor* of the wall is oriented towards the expression, while the *metonymy* of the wall is oriented towards the inner meaning.

What is important in the *idea's* division into the *metaphor* and *metonymy* is the opposite tendencies they establish. The fact, that the wall in *metaphor* is oriented towards the **expression**, means that the *semantics* is subordinated to the *rhythm* (Cezanne line). The Classic architectural language<sup>19</sup> is based on this approach. The *material* in every new *metaphor* contains *rhythm* and *semantics* from the previous metaphor (Chapter 2.1.2). During the development of this tendency to the rhythmical expression, our perception works more and more automatically, and the *metaphor* turns into a cliché. In a similar way Roland Barthes (Barthes 2014: 272) stresses out that a *sign*, in future reproductions, refers not to the previous *sign* as a whole, but only to its expression aspect (pic.14).

The second type of a boundary, that tends to the **meaning**, is a *metonymy*. In this case, the *rhythm* is subdued to the *semantics*. This tendency allows to keep the inner meaning of the signs in opposition to the automatization of the express-oriented approach. This tendency towards the **content** will be described below, in Chapter 2.3.

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<sup>19</sup> By this term I mean the language of Classic Greece, Classic Rome, Renaissance, Classicistic architecture, and functionalistic movements in modernism (like Mies van der Rohe, Dutch De Stijl, Russian Constructivism).



Picture 14. Roland Barthes scheme of further signification (with the referencing only to the signifier).

The tendency to **express**, the *rhythm* that dominates above the *semantics*, as was mentioned before, was developed during the period of Classic language. One of the most famous architects, who greatly influenced following authors, was Andrea Palladio. In many things he follows Vitruvius, the late Roman architect who wrote the famous 10 books on Architecture (Vitruvius, 2014). Palladio worked in XVI century, that was a time of the revival of Classic Roman traditions. He believed in a supreme goal, according to which the God created life<sup>20</sup>. This approach implies logical and mechanistic worldview, but what is more important, it puts the language before the sign itself. The logocentric spirit of Renaissance was reflected in his writings (Palladio 1938: 6):

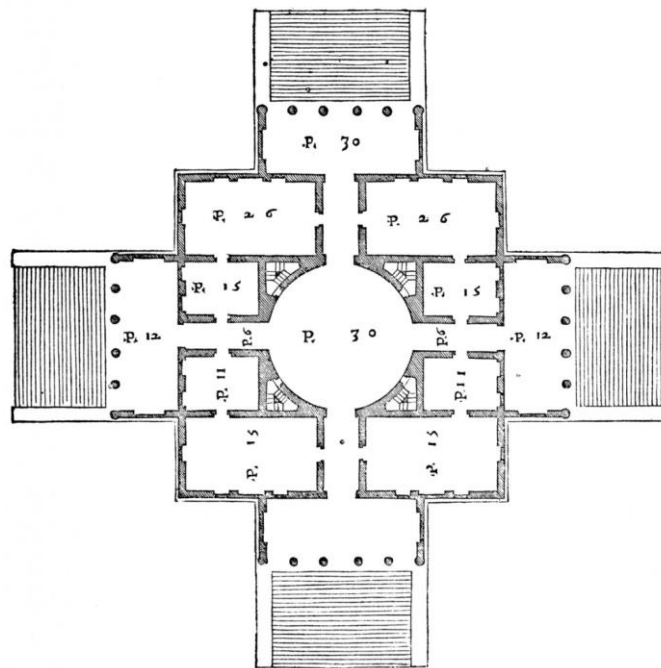
The Almighty arranged the parts of our body in such a way that the finer parts are placed more in sight, and less noble are in the hidden places; in such a way we must act while building, placing the main and significant parts in places of note, and less beautiful parts— in places, perhaps more hidden from our eyes, for they will hold all the ugly things that are in the house, and all that can clutter or even disfigure the most beautiful parts of the house.

Palladio's project of Villa La Rotonda, where he joined a temple and civil building, was iconic (*pic.15*). The main volume of the building is rectangular. At each facade the architect placed pediments with stairs. The pediment set the symmetrical axis going through the building and intersecting in the middle. The villa's structure developed around this central point of origin. There were no physical objects on the axes, such as an altar in a temple.

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<sup>20</sup> This view of Palladio also affected his discussions about beautiful and ugly buildings (Palladio 1938).

However, the idea of centre was emphasized by the axial symmetry of the building. The walls were curved around this immaterial central point in a circular hall, which signified the core. In its turn, the corridor walls went along with the symmetry axes. Rotonda's walls always followed the logic of the guiding lines: these lines established the origin, established the symmetrical principle, which caused through corridors, and outlined the round hall. The room space occupied the remains after the walls divided the main volume.



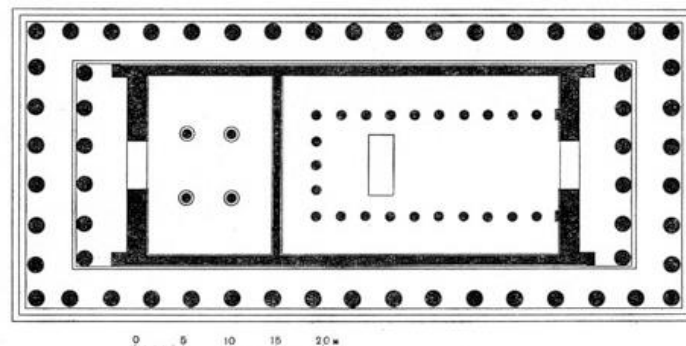
*Picture 15. The plan of Villa La Rotonda, Andrea Palladio.*

In this way, the wall-as-boundary appears as a partition of two rooms. What is more, these rooms do not bear any meaning outside the features that follows structural position. The space appears as a **homogeneous** matter that is to be divided by the **walls-boundaries**. These boundaries divide the emptiness. The buildings are built on the empty cite, they fill the void with their volume, which implies that before the buildings there was nothing here. The walls also almost disconnect from the semantics (which referred to the difference of two domains). The only difference, that is possible in the Cezanne line, is quantitative. This difference is expressed in the relative units: higher, closer, deeper, and so forth.

### 2.2.1 Ark and baldachin

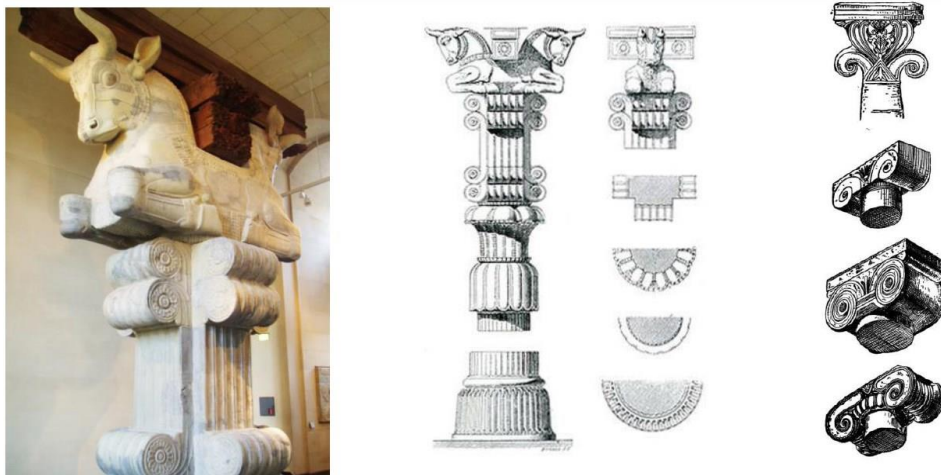
An excellent example of the appearance of the wall-as-a-boundary is the Classic Greek temple, like Parthenon in Athens (*pic.16*). It has a solid volume - *cella*, which is an inner chamber or the temple itself. A *colonnade* surrounds the *cella*; the temple's limits lay along the line of columns. In latest variations, some temples even have a double row of columns. The central volume (*cella*) does not have windows; there are only one or few doorways similarly to the Holy of holies in the temple of Solomon or Egyptian temples in Karnak. The temple's body (*cella*) is made of the continuous brick walls; wooden beams are laid on this wall spreading the pressure gradually along the walls' perimeter. The wall appears here as uniform and solid matter. However, the peculiar thing is this colonnade around, which started to develop a new interpretation of the boundary after the *cella*'s type.

Just as *cella* becomes an allegory of the ark, the columns duplicate the *cella*, with the only difference being the modes of duplication. The *cella* is an early stage *metaphor* like the early Christian Romanesque architecture, while the colonnade is *metonymy*. The entrance into the chamber-*cella* is restricted because it is sacral. The ark contains and substitutes God. The temple, in its turn, contains the ark and it is the ark, from a certain perspective. This formal aspect evolves further into the function - to frame, to go around the core. Likewise, the colonnade duplicates these walls according to the spatial emplacement; it is a border, the limit of the temple as an ensemble. It belongs to the early *metonymical* thinking because it is based on the wall's framing function.



Picture 16. Parthenon in Athens, plan.

Even if the colonnade duplicates the perimeter of the cella walls, it has developed completely differently. On the central longitudinal axis of the Greek temple there was always a statue of a deity. This statue was a prototype of the columns. Initially, columns did not bear any beam loads, but were used to hang heads of human ancestors or of bulls (as a sacral animal) (Zubov 1997: 225); the pillars also were decorated by the bull horns in Çatalhöyük (1997: 127). Therefore, the image of the divinity precedes every column; it is united by the vertical "all layers of the world" structure, as well as menhirs. In Mesopotamia, the pillar top has a capital with two bulls (*pic.17*). I suppose that these bulls were transformed into the Ionic capital because, in both cases, the transverse beam is pinched between the vaults<sup>21</sup>. Besides that, the birthplace of Ionic capital is in Minor Asia, which borders Mesopotamia.



Picture 17. The Mesopotamian capital with bulls (left and middle), the evolution of the Ionic capital (right).

This assumption can be supported by the coins with Artemis from Minor Asia (*pic.18*). The point is that in Greece there almost always were even number of columns on a front facade: 4 or 6 usually. However, depicted on the coin there was a temple of Artemis with an odd number of columns; instead of the central column, there was the statue of Artemis. What is more interesting, it was a chthonic version of her with bull's testicles as a symbol of fertility (*pic.18*), this shows how ancient the cult was. The rest of the columns on this coin were Ionic, not Doric. They developed the idea of the column further, which was to

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<sup>21</sup> This is radically different from the Doric order that shrank under pressure above.

reflect the goddess' place in our world, where one of the function was to establish and expand Artemis' rule. Symmetry is a spatial rule that subordinates elements around some axis (Ivanov 1978), which is Artemis and the temple's longitudinal axis. The colonnade is the boundary; it is always surrounds the temple's body. It also creates a gallery which allows walking in. It implies communication with the outer world under the temple's rule. Using the same principle, architects attach several subordinated naves and galleries, duplicating the central nave.

The difference between the *metaphor* and *metonymy* in the Greek temple is also noticeable in the beams structure. The beam load is equally spread along the whole cella's wall surface. The columns, in their turn, take the beams weight pressure through their central vertical axes - pressure transfers strictly from the narrow beam to the narrow column. The central lengthwise axes of beams and columns coincide. It creates a structure that covers the building from above, like the baldachin (*pic.12*). If the ark acts as sarcophagus, a body container, as resting place, then the baldachin represents the shroud that covers the body. It implies that the baldachin follows the logic of a vertical world axis, because it signifies the top-down hierarchy, the high sky<sup>22</sup>, while the ark separates the deceased from the living, as in the Palaeolithic burials.



Picture 18. Coins with Artemis (Diana) from Ephesus.

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<sup>22</sup> “[...] what can be simpler than a table, a room and some clothes? We will see eventually, that the table, a mundane food table is conceived with the images of sky hight, precisely because it became the habitat of the deity of grain and fruit, a divine animal, that eventually became the table that bares foods and is used for dining.” (Freidenberg 1997: 55)



Baldachin is impossible without the supporting arches and pillars. Their appearance relates to the embracing mode of thinking, tending to expansion. Before the **arch**, the opening in the wall was made by a lintel, a beam that was embedded within the wall surface. One of the first arch prototypes situates in Mycenae in the Lion Gates. The opening is created by stones which protrude further and further creating a stepped proto-arch (*pic.19*). The same brickwork technique was used in Mycenae in the Treasury of Atreus. Here, the stepped vault was hewn after the construction to create a smooth hemisphere curve. Nevertheless, the Lion Gate has a redundant element - they contain both the arch and the lintel, that means that one of the elements does not perform its function, that is to provide an opening. The lintel here acts more like a beam because it only serves to support a stone relief with the lion sculpture. The stepped arch is insufficient after the appearance of the lintel. This example shows that functional explanation has little to do with the explanation of the primal architectural language. What is peculiar is that the lions on the relief are depicted to the right and left sides of a column. This graphical column, of course, is deprived of any utilitarian usage, but it speaks about the meaning of the columns as a vertical<sup>23</sup>.



*Picture 19. Lion Gate (left) and the Treasury of Atreus (right) in Mycenae.*

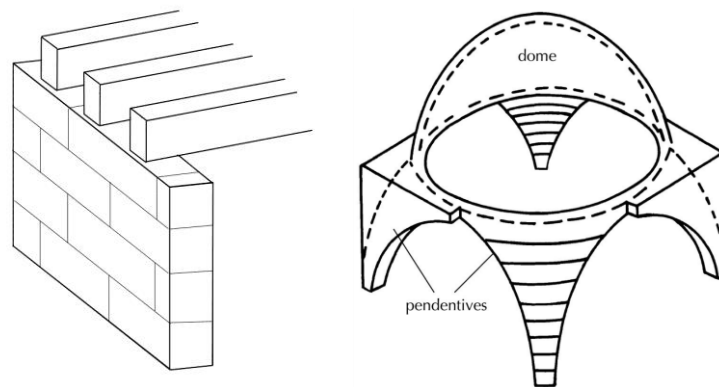
The notion of baldachin was described by the Hans Sedlmayer, he also introduced this term in architecture to call the embracing structure of late Rome. Hans Sedlmayr in his work

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<sup>23</sup> The concept of hierarchy is also noticeable in the triform window structure. Like duplication of a goddess' statue by columns in Anatolian temple, in Gothic, triform window structures supported by the central part. The same logic follows naves arrangement: every attached pair of side galleries (naves) reflects the central one, expands it.



(Sedlmayer 1935) analysed walls and vaults in early Byzantine churches. He wrote that walls could be completed in two ways (*pic.20*). An architect could firstly erect the walls; ceiling beams were to be put above further, the roof would be, in this case, a sort of attachment. Such independence of the wall and ceiling was in cella's ceiling. On the other hand, one could construct a dome footing on columns or vaults, so-called dome on pendentives (*pic.20*). In this, second way, the walls, as a simple external surrounding, became a filling between the arches curves or columns. This second system of embracing domes and arches Sedlmayer called a **baldachin**. Accordingly to these two ways of wall erection, I propose the notion of **ark**, which is a *metaphor* to oppose the *baldachin*, *metonymy*.



Picture 20. The even load distribution on the wall (left); the enhancing structure of a dome without walls (right).

The difference between ark and baldachin is the same as between pre-Romanesque and Gothic architecture. The wall in a *metaphorical* (as mode of expression) pre-Romanesque temple has the same brickwork from the bottom to the top, including the structure of the columns and vaults (*pic.21*). If the ceiling was made with beams, the beams spread the roof weight evenly all over the wall's springing line (*pic.22*). Side naves do not depend on the central one but complement it. They support the hierarchy of the central nave that is wider and higher, but constructively they are independent: the central nave could support itself without the supplementary aisles, roof thrust does not go laterally but straight down. In the pre-Romanesque type of buildings, homogeneous nave vault smoothly transfers to the wall with similar brickwork (*pic.21*). A domical vault can also lean on walls of octahedral volume without any pendentives and supportive arches - pre-Romanesque temple does not have nervures or ribs.



Picture 21. The example of uniform vault of pre-Romanesque brickwork (on the left), vault with ribs in proto-Gothic architecture (in the middle), and high Gothic (on the right).

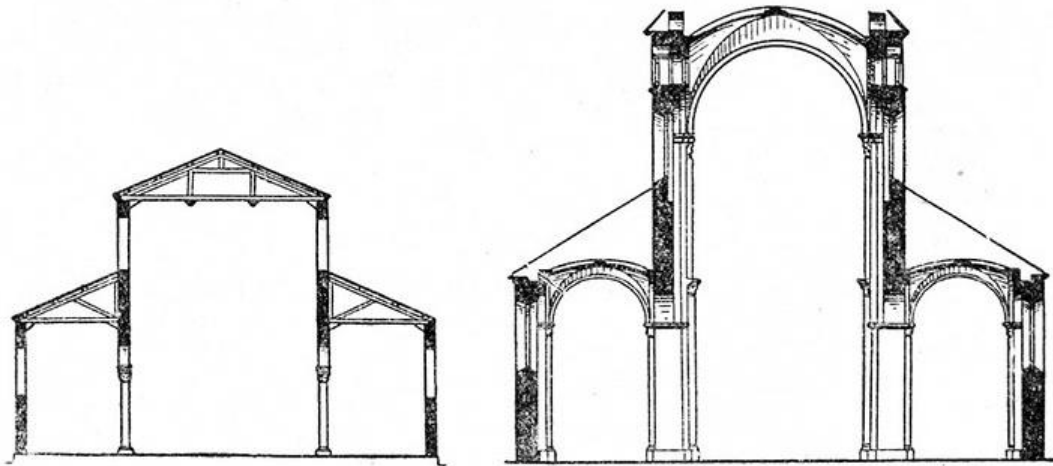
In the situation of the *metonymical* Gothic wall, the hierarchy of the structural elements is the primal thing for consideration. Every detail here serves to the system above, and not to the inner meaning of the object. For example, Ervin Panofsky connects the scholastic tendency to prove the God's existence through argumentation with coherency of Gothic architecture (Panofsky 2004: 235). The principle of Manifestation was the aim of the scholars and architects of that time, that changes not only the buildings but the structure of the books: divided by the parts, they acquired the general pattern that aimed to introduce the logic of discussion to a reader (Panofsky 2004). Panofsky writes (2004: 251):

In its visage a High Gothic cathedral strives to flesh out all the Christian knowledge: theological, ethical, scientific, historical- arranging and excluding, that which is now unnecessary. In the plans structure it (cathedral) tried to synthesize all the essential motives of a different variety and in the end achieved a unique balance between basilica [as bilateral symmetry] and centric buildings [with radial symmetry] by placing all the details, that could tip the balance, meaning the crypt, the gallerias and all the towers except for the two frontal.

Even by the cross-section of a single column, we can understand how many nervures will go further in which direction of a vault - the ribs gather in the centre, around the column.

Considering the central nave colonnade, that may seem similar in pre-Romanesque, Romanesque, and Gothic architecture, it is important to highlight their principal difference. The picture (*pic.23*) is a schematic horizontal cross-section of a wall on the level of the

columns stems. We can see on it two principally different situations: columns are either embedded in the walls' surface or protrude from it. From the first glance, this difference is not sufficient. However, in the first case, it is rather a series of the openings in the wall, while in the second case it is a colonnade.



Picture 22. The cross-section of pre-Romanesque (on the left) and later Romanesque (pre-Gothic) churches.

In the first situation on the left side (*pic.23*) brickwork does not change throughout the height from the floor to the spring line (the top of the wall). These "columns" are the part of this wall, in which openings had been made to join side galleries to the central nave. They do not have any foreign building material, and they share the same masonry technique, the same load spreading system. For example, in Tallinn's church Oleviste, visitors have a feeling of a massive wall. That is a direct consequence of the fact that Oleviste is a typical pre-Romanesque building (except for the late gothic attachments), which columns are the continuance of the massive central nave wall. There are not even columns but pylons, in other words, wall fragments. In this wall builders made portals. These pylons have the same bilateral symmetry axis that goes along the wall's centre.

In the second case on the right picture (*pic.23*) the symmetry axis goes vertically through the columns' centre. These columns are independent from the wall structure, they often appear as round, unlike the pylons that could be only as rectangular as the wall. Real columns have the vertical radial symmetry which does not coincide with the wall's axis. The

masonry also differs: columns often were made of another material or another brickwork style. These columns always represent autonomous structural volumes. The wall in this case appears as a mere attachment, that serves to protect from rain and cold. The optionality of the wall allowed to use large stained-glass windows, the Gothic space is oriented towards the transparency and clarity.



Picture 23. Wall with openings, pilasters within the wall (left), the wall stands on the independent columns (right).

Before the Justinian system (embracing), the columns in Antient Roman temples began to deepen into the wall surface, which caused the appearance of the **pilasters**. Because the columns, unlike the walls, served to bear a beam pressure, the pilasters also were used to distinguish the axis of a loading pressure in the general building mass. The significance of the wall diminished during some time (as well as in Gothic churches), and it became rather the filling in-between the pilasters. Even if pilasters were mere decorative addition, it was important they signified the loading vectors. Pilasters freed walls both from the bearing capacity and the meaning that they had before. The walls had been fading away in Gothic churches until they completely disappeared in cast iron wireframed building of the XIX century, like the Crystal Palace in London, which was used for exhibitions.

Thus, constructively, the appearance of the *metonymy* in architecture is connected with ancient pilasters. The Cezanne line which starts with the *metaphor* ends with the *metonymy*. Gradually, the wall smoothly shifts and merges with the colonnade, with the boundary, which previously surrounded the cella. It means that the wall loses its independence and becomes a partition, the buildings are directed outwards now. Focusing on the *idea* of separation, the wall loses the meaning of containing something within.

### 2.2.2 Repetition and axes intersection

The appearance of *metalanguage* in architecture was connected with constant **repetition**. Thus, seemingly different signs put together, in reality, appear as being similarly structured. As was mentioned above, the linearly understood Sun cycle, where every day was a unique day later was comprehended as a rhythm. Other celestial bodies were perceived with the same integrity and straightness. For example, it was a notable humanitarian achievement to discover that the planet Venus, which sets after the Sun on the West and rises before it on the East, is, actually, the same celestial body. Gottlob Frege writes that the ‘Evening star’ and ‘Morning star’ refer to the same object - Venus - but have different meanings (Frege 2000: 231). The establishment of alternation allowed to omit semantics.

The repetition is a fundamental aspect of nature - from Sun rises and Sun sets to changes of the seasons. Even the perception of death from the very beginning of human culture was based on the resurrection (Chapter 2.1.1). However, in Neolithic revolution<sup>24</sup> one peculiar thing occurred: “At the time of the Palaeolithic, the houses of death and houses of life rarely coincided. Neanderthal and Cro-Magnolians, with all due respect to their dead relatives, avoided living next to their graves. Now [in Neolithic] people are taken by a completely different view - a clan must be connected together and topographically.” - writes Andrei Zubov (Zubov 1997: 106). As was mentioned above, in Neolithic period people associated themselves with the earth they life on. Therefore, they perceived themselves as part of the season cycle in nature, besides the life circle.

Howard Crowhurst, a researcher of the Megalithic menhir alleys in Carnac region (which, presumably, represent traces of the celestial bodies routes), expressed a beautiful idea that a circle, or an oval, always signifies heavens<sup>25</sup> because the circle cannot be **orientated** (Crowhurst 2011). On our earthly domain it could be represented only as a rectangular shape that reflects Cardinal direction in the 4 right angles (Crowhurst 2011). This thought also applies to the two ways to draw the room - the first Matisse method depicts a closed figure, while the Cezanne approach creates an organising framework of guiding lines.

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<sup>24</sup> By this term I refer to the large-scale changes that engulfed human culture in the Neolithic Age, when the God became anthropomorphic (Zubov 1997: 96), nomads changed their lifestyle to the sediment agriculture, and the walls in a dwelling became straight.

<sup>25</sup> What is also interesting, that in Orthodox iconography, there is an oval or circular element called mandorla, which signifies shine of glory, mestery, and wisdom of the God.

The single-standing menhir depicts the World Tree, but its meaning changes dramatically when it is erected among similar menhirs, like in Carnac alley. The rows of the standing stones most likely represent the celestial bodies trajectories. As a result of the multiple reproduction of an element, people formulated specific spatial language that predetermined the characteristics of the element - the stone was placed on the place of axes intersection. Object, that is repeated several times, does not reproduce a model but follows a modelling principle. The object's value is determined by its position in a system. The vertical stones, in their turn, lost their connection with the *metaphor* of the World Tree. Quite the similar axis grid is still used - it is the basis of any architectural design. The point of the axes intersection is often the place of a column; the walls always follow the axis.

The appearance of this spatial language allows us to describe qualitatively different structures by using the same set of tools, such as spatial categories “up-down”, “right-left”, “more-less”, “parallel-intersection”, and so on. The object's characteristics are separate from its meaning. The room can be described as wide, wider, narrow, large, small. These parameters were the basis for the Classical architectural language (Chapter 2.2). Famous art theorist Heinrich Wölfflin in his studies, elaborated a specific vocabulary based on these categories. He described the development in art history from one principle to the other: from linearity to painterly, from plane to recession, from closed to open form, from multiplicity to unity, from absolute to relative clarity of the art piece (Wölfflin, 2013). He used these categories to illustrate the shift from Renaissance to Baroque, and if the Renaissance he determined as balanced and organic<sup>26</sup>, then Baroque for him is anti-Renaissance with its propensity to depict a movement. Nevertheless, what is important, Wölfflin wrote about relation between system and element, which now echoes the Juri Lotman's thought: “we have seen that semiotic organisms can be realized in two ways: as parts of a more complex whole and as a whole consisting of units forming in a structural unity.” (Lotman, J. 2010: 174) Wölfflin said that in Renaissance, every element depends on the harmony of general proportions (like order schemes of Vitruvius and Palladio), the system structure was reflected in every piece, which means that the same code is reflected on every stage of the hierarchy. In its turn, in the opposite situation of Baroque, every element is combined with the others to

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<sup>26</sup> “The question, of how did architecture reach the impression of necessity, has a single answer: it depended almost exclusively on the harmony of proportions. The multitude of relations of wholeness and its parts was supposed to expose its reliance on the underlying unity; the relation is not supposed to seem random; the one came out of the other according to necessity – as the only natural, the only conceivable.” (Wölfflin 1935b: 277)

create a unity. This means, that in Baroque architecture the ensemble of units makes a qualifiedly different whole. Heinrich Wölfflin, even if he gave preference to logocentric Renaissance, outlined the research way of the Baroque architecture, he noted that Baroque “is not a perfect existence, but only the emerging existence, the movement” (Wölfflin 1935b: 278). It means that new art discovered that to perceive the essence of an object is only possible through its performance, that tight together the language and text.

The modernist architecture of XX century continued to use and develop Classic language. In a familiar manner of manifests, Russian constructivist Vladimir Tatlin declared that: “[...] the study of material, volume, and construction gave us the opportunity in 1918 to begin the creation of an art form, the selection of materials of metal and glass, as materials of modern Classicism, equivalent to marble by their past strictness” (Tatlin 1921). Pioneers of this new technology, such as Auguste Perret and his bureau of reinforced concrete, developed principles of new materials usage. In his studio worked and studied Le Corbusier, Ludwig Mies van der Rohe, Adolf Meyer, Jean Kramer and Walter Gropius, but later their paths parted. Mies van der Rohe was famous for his understanding of modern steel structural elements as a Classic Greek architectural order and the derivatives. He intended to develop a new order of modernity: “elegant sections of glass walls with steel or aluminium profiles [...] are the same symbolic expression of the real structure, as pilasters on the walls of the Renaissance palaces” (Ikonnikov 1972: 370).

Concerning the invention of the reinforced concrete, its features and advantages were formulated into 5 principles by Le Corbusier, after his work with Max Dubois in a company of the application of this new material. All these principles are connected by the one thought - there is no need in the walls in their accustomed interpretation as a heavy, solid mandatory structure. The 5 principles are as follows:

1. Replacement of supporting walls by a grid. It implies that all the load is concentrated in the columns, which frees the walls.
2. The free designing of the ground plan. The freed walls now can be placed anywhere a project needs them to be. The walls themselves also could be any size, material, and shape.
3. The free design of the façade. The outside walls also turn into a hinged façade, that reminds of a building's wrapping.

4. The horizontal window. Windows are not a perforation in a thick wall, like an arrow slit, but a wide surface, attached to the column. This allows to make rooms brighter.
5. Roof gardens. Instead of the accustomed gable roof Le Corbusier proposed to make gardens on the flat roofs.

Oleg Yawein points out (Yawein 1982: 10), that early works of Le Corbusier are closely related to the projects by Mies van der Rohe. He writes that they tend to erase the border, to reduce it to the imitation of the total absence of the wall (1982: 10). Without the boundary, the core of the inner space has disappeared, both interior and exterior become homogeneous. When Mies van der Rohe draws an axis grid of his skyscrapers, he is concerned how far it could go, it is not important for him what and in which way to fill it. The only restricting factor is the limit of the building materials capabilities, ventilation, insulation, and fire safety norms. Every storey is a building cite multiplied by the elevator shafts height, they are independent parts. However, every part reflects the general dominating pattern.



### 2.3 The wall as a domain enclosure

The central idea of the XX century architecture, that form follows function, howbeit, sounded quite simple and “does not accurately reflect the relationship of structure and idea” (Lotman, J. 2016: 20). Functionalists of the XX century intended to break with the traditional decorations of the Classicistic epoch. Ludwig Mies van der Rohe declared full rejection of the ornament, which showed his attempt to get closer to the **reality** in architectural design, because the symbolism of the XIX century was comprehended in the XX century as superfluous fiction (Eisenman 1992). Mies van der Rohe wrote: “I’m not against the form, but I’m against the form ending in itself” (Ikonnikov 1972: 372), which meant that such details as Corinthian order or non-functional pilasters were insubstantial because they did not participate in the framework - a building will stand without any of these decorations. However, what is important is the way of thinking that the technical functionalism established. The wall in this case is designed according to the economic needs, and the same economic<sup>27</sup> needs predetermine human demands.

However, similar to the technical functionalism logic had been used even during the architecture of the Classicistic period. Heinrich Wölfflin while describing Renaissance also referred to the Reason, in his own way he tried to grasp the reality, which gave the form of a building to an architect before the design process<sup>28</sup>. He brought an example of Bramante’s work: “not even a little detail of the building is accidental, everything is conditioned by the once accepted basic proportion. And is it really arbitrary and not connected with the necessity? No, it is conditioned by the [...] one [ratio, proportion] that we consider as ‘pure’, which, in other words, is perceived as the most beneficial and natural.” (Wölfflin 1935b: 278). Attempts to depict reality as a sustained matter, even without mentioning the economic problems, has common features throughout many epochs - human existence was perceived as preassigned algorithm. As a result, in a modern design process the architects often become substituted by technologists, who decree spatial structure according to the Building code.

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<sup>27</sup> As economic I mean not only the price of structural elements, but rather application, management, production, usage of objects with the final goal of profit that is focused on the stability of the productive system.

<sup>28</sup> “Every possible proportion between whole and parts must discover their common dependency on the underlying idea of unity” (Wölfflin 1935b: 277).

Even if such classification of technologies is a necessity, it questions the independence and self-sufficiency of architecture as a field.

As was mentioned above, concerning the function, to satisfy a need of a person, one must formulate the essence of this need. Alvar Aalto writes: “Functionalism is justified only if it covers the sphere of psychology. This is the only way of humanisation of architecture” (Aalto 1978: 32), which implies that architecture embodies the human life process, not just responds to the needs. He also says on the topic of standardisation, that the essence of architecture is in “variability and organicity resembling the ever-changing organic life of nature” (1978: 29). Therefore, the life should be understood not as a set of parameters, but as a movement of rituals; their spatiality defines the spatiality of architecture. The human interaction with architecture is coexistence of different *domains*, which represent different aspects of our life: being on either side of the wall should be reflected also on the room’s qualities (Chapter 2.1). Therefore, the metonymies, formed by Cezanne line, turns further evolution towards the new metaphor and towards the Henri Matisse approach.

The new perspective that Tartu-Moscow Semiotics school brings, along with Russian Formalists, is the inseparability of structure and meaning. These scholars did not try to get closer to reality as objective matter, on the contrary, they defined reality through the process of articulation, that removes the dominance of the final goal. Lotman writes that “writer’s thought is realised in a certain art structure and is inseparable from it,” he adds that the retelling of a poem will destroy not only its structure, but also the information it conveys (Lotman, J. 2016: 19). The point is, that language, as a mechanism of signification, appears simultaneously with the message. In other words, we do not name already existing, real objects, because there are not any real objects, we comprehend the environment only through our communicative system (*language*).

The visual art of the Classicistic period associated with the Apollonian Sun was eclipsed. The first futuristic opera “Victory over the Sun” symbolised this forthcoming cultural revolution. The decoration that was used to depict the eclipsed Sun was made by Kazimir Malevitch and served for him as a proto-type of his Black Square. Kazimir Malevitch, as the leader of the supremacism, belonged to the Henri Matisse line (Khan-Magomedov 1996: 88). Malevitch was in the opposition (*pic.5*) with Vladimir Tatlin (who was a constructivist). Kazimir Malevich also expressed himself in a manner of manifest, but his approach did not chase reality, on the contrary it avoided it: “An artist can be a creator

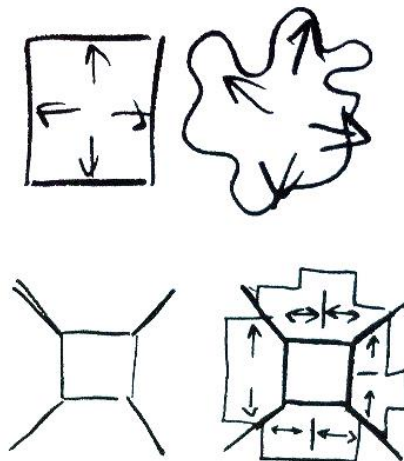
only if the forms in his paintings have nothing common with nature.” (Malevich 1916). The realest thing in art for him was the prism of the artist’s perception. He proposed to avoid figurative painting and narratives as well to get closer to the painting technique itself: “The valuable in the painting is the colour and texture - this is a picturesque entity, but this essence has always been killed by the plot. And if the masters of the Renaissance found the picturesque plane, it would be much higher, more valuable than any Madonna and Gioconda. And every carved pentagon and hexagon would be a greater piece of sculpture than Venus de Milo or David.” (Malevich 1916). Malevich tried to draw our attention to the problem of semantics of utilitarian elements, which had lost their self-sufficiency.

A split in architecture of the XX century, similar to the opposition of supremacism and constructivism, is connected with understanding of correlation between object and method of its construction. For Mies van der Rohe the domination of the method neglected some inner organisation deviances - the subjectivity of the object, he was interested in “how”, and not “what” (Ikonnikov 1972: 374). For him the objectiveness and impersonality were the basic principles, he strived towards realism: “We need to answer the demands that our current times are issuing – demands of realism and functionalism. Only then our buildings will express the potential magnitude of our epoch.” (1972: 373). At the same time, another American-Estonian architect, Louis Isidor Kahn, writes that we should distinguish form of the building and its project: “Form is ‘what’. Project is ‘how’. The form is impersonal. The project belongs to the designer.” (1972: 527). The project depends on the budget, the context, the author, in other words, all these functions that Mies van der Rohe strived towards, while for Kahn (Kahn 2003: 69) the form is what we would call a signified:

A great building, in my opinion, must begin with the unmeasurable, must go through measurable means when it is being designed and in the end must be unmeasurable. The design, the making of things is a measurable act. [...] But what is unmeasurable is the psychic spirit. The psyche is expressed by feelings and also through and I believe will always be unmeasurable. I sense that the psychic Existence Will calls on nature to make what it wants to be.

In architecture this co-dependency of form and design (as mediation) is visible in the Louis Kahn project Bath House (*pic.25*). Its plan seemingly resembles the plan of the Villa La Rotonda (*pic.15*), but there are crucial differences. Kahn’s project consists of the four squared rooms (served space), which create a cross with empty central space (servant space) and

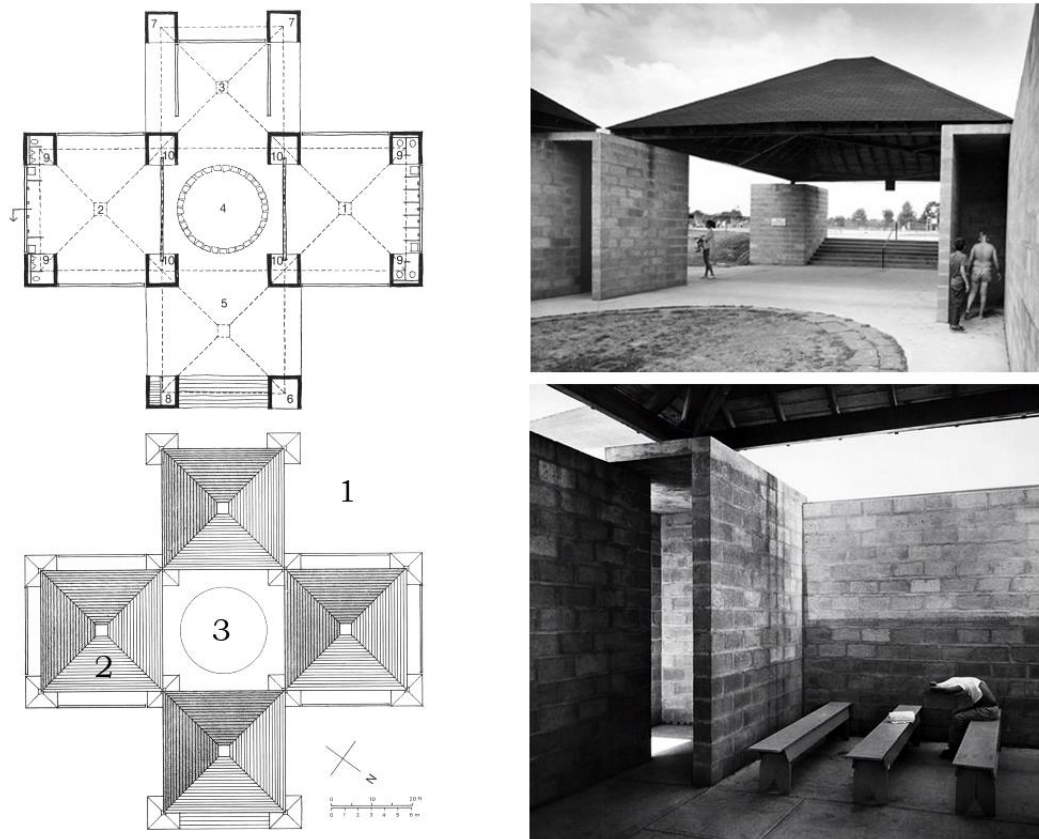
empty “corners” (*pic.25*). The four rooms are united in the ensemble, but they do not depend on each other. The shape of the ensemble is determined by its meaning (“interior desires” as Kahn calls it): “[...] a house is a building which extremely sensitive to internal need. In this satisfaction there was an *existence will* [...] for this house not to be disciplined within a geometric shape [rectangular perimeter]” (Kahn 2003: 107). He notes that a building should not be just a rectangle, only because it is more economically efficient, but the form of the house should follow its own **inner desire** to have the cross structure (the same as of a bath house) (*pic.24*). The cut corners (*pic.25*, *pic.24*) should not be filled, because otherwise, these corner rooms will become served space and will demand the connection with the central empty servant space - atrium. In that case, the already existing four rooms will turn from served space into a servant space, connecting the atrium with the new corner rooms. (Kahn 2003: 107).



Picture 24. Louis Kahn's sketches on rectangular rooms' desire to be organised

Kahn emphasizes that “all spaces worthy of being called a space need natural light” (Kahn 2003: 108), but just enough to show its purpose; for example, such purpose as being a covered, closed room. The four rooms of the Bath House are covered with a roof, but the roof is slightly uplifted and shifted (*pic.25*), to let through a very thin beam of light, which shows the isolation of the room through framing of the natural light. In a similar manner the architect designed the entrance to the changing rooms, where he did not use the doors' immediate

access, but the wall geometry ("S" shaped corridor), which hid the changing room interior from the eyes of the outsiders. He designed 12 pillars-chambers holding the roof, but he could not just leave the framework without an interaction with the users, because the pillar itself is not spatial - Kahn made people walk around within these pillars. He did not only wrap the pillars with brick wall but wrapped them with human movements. He could not create walls-partitions that separated the already existing area - every small corner closet contained one or another *domain* of human activity (*pic.25*). He achieved great clarity and semantic tension on these corners by the separating rituals.



Picture 25. Bath House, design by Louis Kahn. 1 - cut corner, 2 - served space, 3 - servant space.

On the contrast with these four covered rooms there is an open space in the middle. Even if rooms do not cross each other, they are united by this atrium. This atrium determines the Bath House existence - it is the place where the direct sun light hits the ground, where people enter to eventually be split into different groups later (swimming pool, male and

female changing room). The atrium acts as a mediation of the sun light, as a signification of people's visit of the swimming pool. The four attached rooms are the *domains* of human life, even they are not that widescale as life and afterlife. However, the process of entering and exiting the room is realised through the small serving spaces of pillars-chambers (as thou a sacred space), which means that Louis Kahn distinguished the entering/exiting from the belonging to the inside or to the outside. This implies a change in the viewers perception depending on the *domain* they currently inhabit.

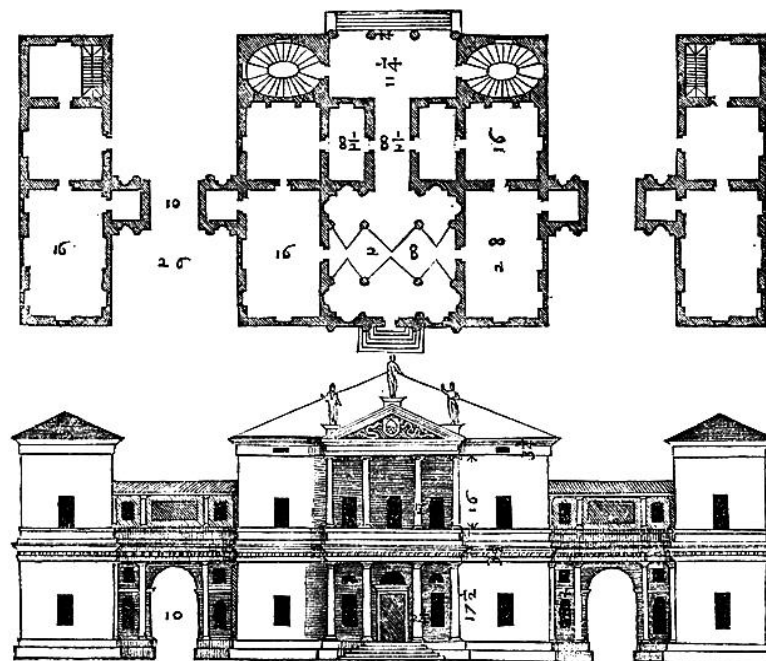
In the Matisse line that is intrinsic to the *domain*, described in this chapter, the primal aspect of sign formation is the qualities of the room. They dictate the appearance of the wall. As Oleg Yawein writes, in this type of partition, the boundary not only separates but presents by itself the separating space (Yawein 1987: 7). This implies the heterogeneity of the space: the walls do not divide the empty space but embody the difference between them (Chapter 2.1). It appeals to the thought that the difference could be perceived by a human through the belonging to one or another *domain*: the meaning of the wall is determined by the space it divides.

### 2.3.1 A fold and movement

When Heinrich Wölfflin describes restless motion of the Baroque architecture, he emphasized that this new art tends to create layers of structures. Columns are placed at odd angles, they seem to rotate, pylons protrude from walls, columns melt into folds – new planes appear, that give the feeling of movement, as if the viewer is in front of several perspectives at the same time, instead of a single one (Wölfflin 1935b: 273). The essence of the Renaissance perspective was that it could be unlocked even without the presence of the onlooker. With only the plan one could reconstruct the façade-perspective, as though it is the perspective of a perfect Renaissance painting. Baroque has no viewing point, it melts on its way, while Renaissance has a specific single point for the observer. Baroque architecture removes static perception: to comprehend the structure of a building a viewer must walk through and around it. Classicistic Renaissance architecture reduced all perspectives to several most significant views. Thereafter, Renaissance diminished the plasticity of the façade, instead of it this art style proposed a neatly organised perspective. Functionalism of the XX century emphasized this aspect and almost abolished the point of view, proposing instead the parametric

description. However, Baroque architecture was one of the movements that was able to return the personal perception of the architecture.

In the Baroque architecture the irregularity of the interior organisation is reflected on the façade that becomes wavy. However, preceding Classicistic architecture also has this connection of the interior and the exterior. It is possible to trace the logic and purpose of a building by looking at the façade (*pic.26*). For example, the long corridor differs by its characteristics from the square hall, which is reflected in the proportions as well. Consequently, the volume of the corridor will tend towards the elongated shape, where the horizontal dimension prevails over vertical. The square or the circle on the plan of the hall will tend to the geometrical cubistic volume, where all the sides are even. Moreover, the hall, as a more hierarchically significant room than the corridor (because the hall is an aim and the corridor is a way to reach the aim) will be higher than the corridor. In the case with the villa Pisani (*pic.26*) the accessory spaces and the less significant connection are represented by the entrance gates, which are also lower and deeper. Considering façade plasticity, the corridor surface will be a dent, and the wall of the hall will be noticeably protruded.



Picture 26. The drawing of Villa Pisani in Montagnana by Andrea Palladio.

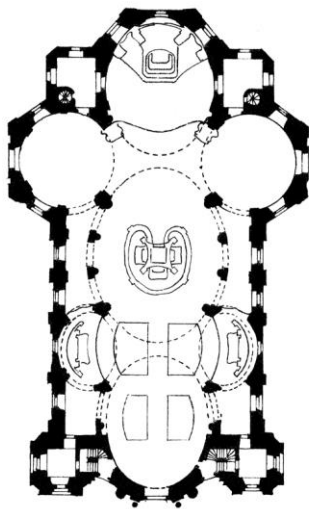
The Baroque architecture knew this classical language and used it; for instance, a big oval hall would also create a protruding semicircle on the façade, a corridor would be marked by deepening. Nevertheless, another principle is that in Baroque architecture the inner is also isolated from the outer. The Baroque wall always has irregular triangle remains when the oval and curved rooms are fit into the rectangular perimeter (*pic.27*), they represent the conflict of co-existence of different areas. Deleuze writes that “Baroque architecture can be defined by this severing of the façade from the inside, of the interior from the exterior, and the autonomy of the interior from the independence of the exterior.” (Deleuze 1998: 30). Thereby, one never can be sure what to expect inside; that contradicts the first idea of the complete correlation between inner and outer – in Classicist architecture it is possible to predict the inner structure in detail. Even if a big oval Baroque hall is imprinted to the façade, it rather signifies the existence of this big room then shows its characteristics. Baroque rooms do not depend on each other, as elements in the classic system, but coexist together inside the building's body. The wall here is not used as a guideline as it was in the axes intersection. The regular grid becomes uneven; therefore, the order is disturbed, and the wall appears as belonging to the room, not to the grid's logic.

Gilles Deleuze described the phenomena of Baroque on the example of the *fold* in architecture. The *fold* was a principle in which both sides of the *fold's* bend are reflected in each other (Deleuze 1998), like the sheet of paper in the Saussurean example of the *signified/signifier* (Chapter 1.1). Deleuze writes that “The fold is inseparable from wind” (Deleuze 1998: 31), emphasize that co-dependence of both sides is determined by the movement that created the fold. In a similar way Louis Kahn writes that “the sun was not aware of its wonder until it struck the side of a building” (Kahn 2003: 253), which means that the building surface takes a hit of different reflections and movements during its designing. The humans' movements, their perception and language are reflected, imprinted, minted in the surface of the Baroque walls. The *sign's* meaning is in the *language* that creates these *folds* between *signifier* and *signified*.

Almost every room in Baroque tends to the curved shape. This architecture avoids slitting space right angles and demands constant movement: all the angles it tries to smooth, change them to a diagonal. The rigid corner of 90° becomes smooth 45°. Therefore, while moving, we do not turn from one dimension to another, as the edge between planes is erased. Instead of it, we move in a solid space where one room overlap another: “where one figure is



half-hidden by another it is impossible to fully apprehend the visible, and, therefore, it gives us the impression of movement” (Wölfflin 1935b: 276). Baroque introduces the temporal aspect to the architecture; every new perspective embodies new state of the viewer. The different rooms are domains for the visitors, the walls wrap their movements and sight trajectory. The room, being a domain, focuses within itself, the rigid structure of guiding axes is distorted. Heinrich Wölfflin comments that “[...] the half-hidden forms are supplemented by the excessive abundance of motifs, which leads to the fact that the parts, no matter how great they are, lose their significance, dissolving in the effect of the whole [...]” (1935b: 276). In this way, rooms in Baroque architecture move the tendency to “consisting of units forming in a structural unity”, which is inherent to Renaissance, to the disposition to be “part of a more complex whole” (Chapter 2.2.2). If in Renaissance the structure was reflected in every aspect of the room, and it was possible to predict the next room, then in Baroque all the isolated rooms create qualitatively different “complex whole”.



*Picture 27 The Basilica of the Fourteen Holy Helpers, Southern Germany*

The instability that Baroque proposes also relates to a notion of noise, or entropy, developed by Juri Lotman. For example, Umberto Eco explains the notion of noise as a mistake in a channel of communication (Eco 2006: 47). To avoid the mistake, people elaborate more sophisticated codes, which engender in that case necessary redundancy. Even when Eco talks about noise in art texts, he assumes that noise is an additional interpretation to once constructed author’s code (2006: 145). Lotman, in his turn, introduces the notion of

noise as an intrinsic feature of the art piece. According to him, the art piece initially has an infinite number of possible interpretations because the piece of art is created as a breach in the system. For the process of semiosis people need at least two systems, which are untranslatable beforehand: only this conflict can create the evolution of art language (Lotman, J. 2010: 105). Otherwise, the hypothetical cyclic movements will produce predictable texts, that are unable to create unpredictable situations (2010: 46). This unpredictability differs art from mechanical devices.

### 2.3.2 Meaning of building materials

The wall, becoming at a certain moment an independent object, dissolving during multiple repetitions, and the *idea* of the border comes to the foreground. The *image* of the wall fades away along with *semantics* of a sign, and the *meaning* gets occupied by the functional description. The moment of extreme automatization comes. The wall turns into a set of descriptive parameters such as "vertical plane," "building perimeter," "insulating." The building material itself is not that important; the number and location of the openings (doors, windows), how to insulate the walls is not significant either - depending on a climate it could be cold, heat, insects, moisture, or wind. The wall as an object disappears completely; now it is deprived of its load-bearing capacity, as pillars/columns took all the weight.

The architecture loses the concept of the centre; the possibility to establish the centre also disappears, because the notions centre/boundary are connected. The centre now is more of a parameter that is to be settled according to a specific temporal situation - it is a floating point (for example, it depends on a building tenant). This means the architecture becomes a-temporal, because the project exists in a single moment.

This kind of automated, functional architecture was greatly represented by The Glass House by Mies van der Rohe. This project so influenced Philip Johnson, that he has made his own version of the glass house. However, Philip Johnson designed a curious detail in his project that distinguishes these two houses (*pic.28*). I am talking about the oval brick volume in the centre of Jonson's project. The architects place a fire place and bathroom in it. Mies van der Rohe's project also has an isolated volume with similar functions (it would be unpractical to have a transparent glass bathroom). However, for Mies van der Rohe such a room is an exceptional necessity, while Johnson proceeds from the semantics of this volumes function.



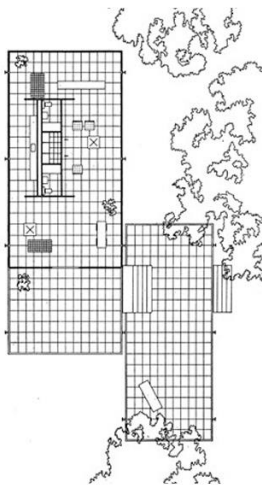
Picture 28. Class House by Mies van der Rohe (above), and by Philip Johnson (below).

The central volume in Mies van der Rohe's project is rectangular, it is subdued to the rectangular grid of the whole building. This volume is made out of a framework, as the rest of the house, unlike the solid brick wall in Johnson's project. What is more important, this central volume for Mies van der Rohe does not reach the ceiling (we see a gap between its top and ceiling surface), that makes it another piece of furniture in this glass box, while in Johnson's version the oval core goes through the roof breaking its surface. Philip Johnson not only makes this volume deliberately oval, which is opposed to the building's axis grid, but also its top is the highest point in the structure, that makes it a dominant. Besides this, it is



made of bricks, that refers to the brick chambers (Chapter 2.1). The fact that Johnson makes a fire place within also correlates with the idea of a hearth in the centre of a nomad dwelling. His house appears as heterogeneous, it embodies human life and endures changes due to the rituals, while Mies van der Rohe's house obeys the structure.

Philip Johnson emphasises the contrast of this central volume made of clay and the ultimate simplicity and purity of the glass box. This contrast is a distinguishable feature of the project. The floor (also made of clay bricks) is laid out on the earth level, that makes it a part of the landscape, while the metal framework reposes on this raw foundation. In its turn, Mies van der Rohe's house stands on stilts, its floor is laid out with white stone, that echoes the white framework, it is elevated above the ground. The earth repels the house by Mies van der Rohe, while in Johnson's house the ground permeates the interior, its material also reflected on the core dominant volume.



Picture 29. The plan and photo of Glass House by Mies van der Rohe (above), and by Philip Johnson (below).

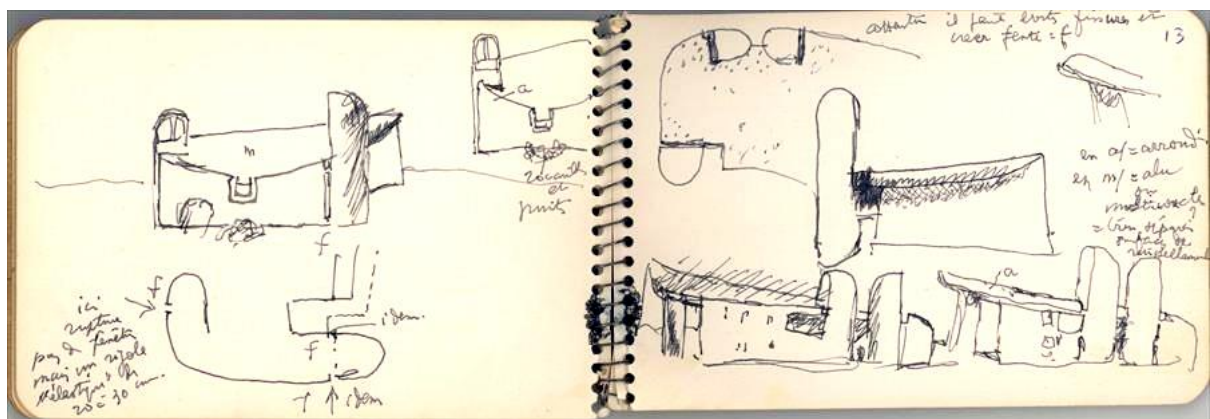
Comparing the axis grid, Ludwig Mies van der Rohe draws a more sophisticated pattern of the structure: he has much more guiding lines and compositional elements than Philip Johnson. White stone slabs are arranged according to these guide lines; the central volume's coating wooden panels also adjust to this structure. All these seams are conjoint with the building system, because for Mies van der Rohe the predominant order is the basis of design. Philip Johnson is more interested in the radical sterility of the space, he shows the house without walls except for the core, while in Mies van der Rohe's project there are immaterial, invisible partitions yet perceivable due to the guiding line traces. By using the same grid principles, yet with a different materials and element placement these two seemingly similar projects represent an invisible transition from Cezanne to Matisse line.

New metaphorism is visible even in the early works by Le Corbusier, which is traditionally associated with functionalism of his five principles of architecture (Chapter.2.2.2). In his villas the courtyards are, semantically similar to atrium of the Antiquity, altar, or pillar of light as in Louis Kahn's projects. Le Corbusier's villas tend to bend around these inner gardens, even in the villa La Roche or exhibition pavilion L'Esprit Nouveau. Another characteristic feature in his villas are ramps. For example in villa La Roche, which smoothly connect the masses of the wall and the floor, despite the fact that a compact stair would be enough to reach the upper floor. The comfort of the gradual ramp slope is not the reason. The point is that to get to the upper floor a person has to walk through the space of a gallery and to behold it. The interior is viewed from different perspectives, like a Baroque church.



*Picture 30. Villa La Roche, Le Corbusier.*

The free designing of the ground plan erases the need for the walls. However, Le Corbusier uses solid walls combining them with glass surfaces to highlight accents where it is needed. For example, in the villa La Roche the ramp bends around the room along with the curved wall it is attached to. The walls surrounding the ramp have no window openings, but the upper floor is full of light (*pic.30*). It makes an ascending person get up from the depth towards the light. Due to the new material - reinforced concrete - the walls became similar to the floor, ramp, and ceiling as they create solid unity. Alternation of glass surfaces and white concrete masses react to the human motions within the building. By combinations of transparent and blank surfaces the architect shows the heterogeneity of the interior – the window in the gallery differs from the window of the attic. Glass insertion in the walls are exposed in places where the natural light enters the house and gets tinted by the walls. The natural light is an accomplice in indoor activity, the nature is invited into house organisation. For Le Corbusier the harmony of people and nature was crucial.



Picture 31. The sketch of a mountain by Alvar Aalto (above), and the sketch of the Chapel Ronchamp by Le Corbusier (below).

Heinrich Wölfflin expressed a beautiful idea that “The influence of beautifully dismembered space should be felt in the case, when we are lead trough it with our eyes closed. The space as something corporal, can only be experienced with the body organs.” (Wölfflin 1935a: 257). It is significant, that in the Viipuri library designed by Alvar Aalto there is a scale model of the building that is used during the excursions for the visually impaired visitors. For this library project, the inspiration for the stepped section of the Viipuri Library reading room was an Aalto’s sketch (*pic.31*) of a fantastic mountain (Holm, 2013). The image of the future project came to his mind in its completeness, like the Chapel Ronchamp image came to Le Corbusier. Aalto wanted to depict the ascending to the mountain, towards the ceiling skylight of the reading hall. The mount ascension is an archaic image, that stays in the foundation of the religion (Mazih, 2012). A human, without any utilitarian purpose or benefit, puts a great effort into reaching the top of the mountain, which puts him closer to God, like the Mesopotamian temples on the top of Ziggurat served as a place for the God’s step (Mazih, 2012). The library's structure follows similar semantics, where the readers ascend the stairs driven by the desire for learning. What distinguish this metaphorical approach from the Classicistic metonymy is that light was the goal that architecture strives to, while in Aalto’s project the light and landscape is the foundation of the design. Metonymical architecture uses structural elements to achieve the goal, to transfer the information; for the metaphorical architecture, the element itself, its meaning is the goal to express.

The direction of Matisse line lead from metonimies to the metaphors in architecture. The structural elements acquire strong connection with their semantics, that influences the understanding of the meaning of the material and shape. The image of the dwelling, “to dwell”, of the signified’s imprint is represented through the metaphor of earth, soil, clay. This signification affects the building’s shape as well, that also subdues to the semantics - the stone architectural forms becomes enclosing, bended around, their content.

## Conclusion

The main aim of the method I propose is to describe the spatial language of architecture. Exactly the organisation of space makes architecture an independent discipline, it does not allow engineering sciences, history or sociology to absorb it. Architectural theory is often described from the position of the humanities or sciences, but its own dictionary sometimes seems to be outdated. In this work I propose to apply semiotics to renew some for a long time established concepts, such as rhythm, boundary, room, centre, domain, form, symmetry, axis.

It is not even a problem that architecture needs the independency, or someone has to protect it, it exists and represents its very own distinctive language, which people use. The problem is not that people impoverish modern architecture by not applying proposed methods – architects already apply it in design, they cannot avoid it. The question is how we perceive the already existing ensembles. I suppose that the real problem is ascribing some not quite accurate conclusion to the present architecture. I think that my method could influence the current architectural theory. The outlined approach described in this work can be applied to any building; its main purpose to help the viewer read the building and speak its language.

I believe, that the meaning that the architectural constructions convey is connected with the primal stage of the architectural language, which I propose to call *images*. *Images* are concrete thoughts of the myth-creating period, that are created according to the *metatext*. Even if it is unreachable now, the structure elements can be assembled only due to this initial semantics. In spite the strictly utilitarian usage, every architectural element keeps its inner semantics, which it forms through the spatial relations with other elements.

Thinking with *images* is not available anymore – modern people think with abstract *ideas*, which are created according to the *metallanguage*. Depending on the relation between the rhythmic structure and the semantics, *ideas* can be represented either by *metaphors* or by



*metonymies*. They switch places between each other countless times, and to separate one from the other within a single art piece is almost impossible, especially because they were developed parallel to each other. However, what is possible is to trace in the architectural language evolution specific tendencies towards metaphorical or metonymical mode of expression.

Modern architects developed plenty of various techniques, architecture becomes more and more divers. It may seem sometimes even bizarre and eccentric. Nevertheless, very often the spatial language of these techniques still uses the Classicistic architecture logic. It can be problematic for the architectural theory because this logic is only a single stage in the architectural evolution, the Cezanne metonymical line. It cannot analyse the architecture of archaic epochs, Baroque, and Supremacism movements. The method I propose helps to reconsider and rethink the meaning of architectural vocabulary elements and trace the whole process of meaning evolution. Thereby, this new approach emphasizes the primacy of the ever-evolving language over the fixed meaning in the architectural analysis.

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## Annex: the list of graphic materials

- Picture 1. Hillel Schoken, *The drawing of Chapel Ronchamp*. [image]. Available at <https://www.arch2o.com/the-story-of-5-archists/> [Accessed: 22 May 2018].
- Picture 2. Saussure, Ferdinand de (1977). *Relation of signified/signifier*. [scheme] In: Saussure, Ferdinand de (1977). *Kurs obshchej lingvistiki* [Course on general linguistics]. Moscow: Progress. p.68.
- Picture 3. Ivakhnenkova, Kristina (2018). *The reconstruction of Tynyanov's description of poetry and prose*. [digital image].
- Picture 4. Ivakhnenkova, Kristina (2018). *Two ways to draw a room*. [digital image].
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## **Resume**

### **Образ и идея в формировании архитектурного языка**

В данной работе представлено применение семиотических методов исследования к проблемам архитектурной теории. Основой анализа является дуалистичный подход, предложенный Фердинандом де Соссюром, а так же представителями Тартуско-Московской семиотической школы, Ольги Фрейденберг, и Мартина Хайдеггера. Он заключается не только в паре означающее/означаемое, но и в принципиальном одновременном появлении как обоих этих аспектов, так и языка, который их объединяет.

Методом исследования является принятая историчность (не постоянность) концепций архитектурного языка, которые на раннем этапе были конкретными образами, а в дальнейшем перешли в абстрактные идеи. Идеи же, в свою очередь, бывают или метафорами, или метонимиями. Объектом исследования я выбрала стену, как базовый архитектурный элемент, который так же связан с понятием границы и непереваемостью как основным механизмом семиозиса. Главный вопрос рассматриваемый в работе - это описание архитектурными средствами каждого этапа развития стены. В соответствии с этими этапами называются 3 главы - комната, граница, область.

Актуальность моей работы заключается в том, что благодаря данному методу возможно проследить семантику отдельного архитектурного элемента, его значение, не смотря на чисто утилитарное использование. Моя гипотеза в том, что конструктивные элементы сохраняют эту семантику, благодаря чему мы можем выработать функцию и применить эти детали, а не наоборот. Такой подход позволит по-новому понять эволюцию архитектурного языка.

## **Pilt ja idee arhitektuuri keele kujunemises**

Käesolev töö tutvustab semiootiliste meetodite rakendusvõimalusi arhitektuuriteooriate probleemistikule. Analüüsi aluseks on Ferdinand de Saussure'i dualistlik lähenemine ning ühtlasi ka Tartu-Moskva semiootilise koolkonna esindajad, Olga Freidenberg ning Martin Heidegger. Käsitletakse mitte ainult tähistaja-tähistatava paari, vaid ka nende simultaanse ilmnemise printsiipi, ning keelt, mis neid ühendab.

Uurimismeetod lähtub arhitektuuri-keele kontseptide ajaloolisusest (mitte-stabiilsusest), mis algsetes staadiumites on konkreetsed kujundid (images) ning hiljem abstraktsed ideed. Need ideed ise võivad olla metafoorid või metonüümid. Uurimisobjektiks valisin seina, mis on primaarne arhitektuurne element ning ühtlasi seotud piiri ja tõlkimatusega, mis on semioosi baasmehhanismideks. Uurimise peamine eesmärk on seina näitel kirjeldada semiootilise sõnavaraga igat sammu arhitektuurses evolutsioonis. Vastavalt on töös kolm peatükki: tuba, piir ning domeen.

Minu uurimuse asjakohasus seisneb selles, et see meetod lubab uurida iga arhitektuurielemendi semiootikat, selle tähendust, mitte vaid tema utilitaristlikku kasutust. Väidan, et ehituselemendid säilitavad semantilise tasandi, läbi mille saame arendada nende funktsiooni ning kasutust, mitte vastupidi. Selline lähenemine annab uue vaate arhitektuurikeele arengule.

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