

# Spatial semiosis and time<sup>1</sup>

*Leonid Tchertov*

Dept. of Philosophy, Saint-Petersburg State University,  
Mendeleevskaja line 5, St. Petersburg 199034, Russia  
e-mail: tcher@LC9661.spb.edu

**Abstract.** Spatial semiosis differs from temporal one by its structural and functional peculiarities. Meaningful relations between units of spatial texts are not ordered along of temporal axe and do not need time in their form of expression. However time remains an important factor for both: being of the spatial semiosis in the external time and being of time in the spatial texts as object of representation. In the contrast to temporal communication, where acts receiving of texts must be synchronized with the acts of their (re)production, spatial semiosis is built as a diachronic process, dividing in time from two separate acts: creating and perceiving. This structural peculiarity allows to connect people from different temporal periods and gives to spatial semiosis the function of irreplaceable means for cultural memory. Excluding time from the semiotic form of their plane of expression, spatial texts have some rules of presentation in time and semiotic means for representation of temporal order and duration in their plane of contents. There are different means of representation of time in the spatial forms: the projection of temporal structures on the spatial ones, concentration of different moments in one state, etc.

## 1. The difference between spatial and temporal semiosis

The problem of relations between spatial semiosis and time is a matter of principle for semiology of space. The last must be differed from spatial *semiography*, which describes concrete spatial signs and re-

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veals their meanings. As to *semiology* of space, it is built on a higher level of generalization, and is occupied with such questions as the possibility of spatial semiosis itself, its specific character, ways of semiotization of space in different spatial codes, etc. The problems considered in the report belong just to this semiological level. These are the problems of relations between spatial and temporal semiosis, peculiarities of existence of spatial semiosis in time and ways of representation of time in spatial semiosis.

First of all, it should be mentioned, that distinction of spatial semiology as an autonomous branch of semiotics is based on the essential difference between temporal semiosis and spatial one, as a special form of sign connection. This difference depends to great extent on their different ways of existing in time: in spatial semiosis temporal relations do not generate meaningful units of text, — in contrast to temporal one, were they do. Despite spatial and temporal semiosis can often be coordinated with each other in spatial-temporal messages, they have different structural and functional possibilities.

Spatial bearers of meanings, which are mainly intended to the visual perception, permit arranging relations between meaningful units as structures of other types, than chains of signals following each other and addressed to listening (see Jakobson 1964). The semiotized space can differ in the main from temporal structures by its “semio-topological” properties: non-linearity, reversibility, types of symmetry and asymmetry, etc. (see Tchertov 2000). Due to variations of these properties, syntactic structures in spatial semiosis can be more various and complex, than ones limited by temporal axis.

For description of specific structural features of spatial semiosis the version of semiology, which traces back to Ferdinand de Saussure’s linguistic generalizations is ineffective. This version based on the declared in his “Cours de linguistique générale” principles of language: the principle of non-motivation of signs and the principle of linearity of significant units. These principles are not relevant for many semiotic systems, which regulate communication by means of the visual-spatial channel of connection. In particular, the principle of linearity, intended to describe consecutive interchange of signs first of all in oral speech, is not relevant for messages, plane of expression of which is not reduced to such linear sequence, and where the order of units can be reversible. Correspondingly, a theory based on the principle of linearity turns out to be not a universal semiology, but a

“chronosemiology” — a theory of temporal semiosis, where meaningful units “dispose nothing but a timeline” and follow each other forming a chain (see Saussure 1972: 103).

Describing of systems regulating non-linear and reversible bearers of meanings in the spatial semiosis requires another, “non-saussurean” semiology — such theory of semiotic means, where at least one of two principles of saussurean semiology is not performed. First of all it is the principle of linearity of syntactic units, though another one — the semantic principle of sign arbitrariness is also irrelevant for many of these systems.

Like linguistics became the ground for semiology of Saussure and logic — for semiotics of Peirce, investigations of expressive and representative means of visual arts, carried out traditionally in aesthetics and visual arts theory, can become a basis for semiology of space. It is notable, that the difference between spatial and temporal means of representation is discussed in aesthetics from the moment of its appearance as an autonomous discipline in the Age of Enlightenment, when this problem was raised especially sharp in famous “Laocoon” by Lessing. Particularly, a number of Russian art investigators, like Bachtin, who has described a “chronotop” in literature, have discussed the relations between the time and spatial arts (see, especially Favorsky 1988; Florensky 1993; Gabrichevsky 2002; Vipper 1962; Volkov 1967; Zhegin 1962). However the problem of relations of spatial means of representation and the time exceeds the limits of aesthetics and art theory and touches the grounds of sign theory, first of all the divergence of two its branches — spatial and temporal semiotics (see Tchertov 2002).

The difference between spatial and temporal bearers of meaning can be defined within the framework of the “non-saussurean” semiology as the structural diversity of the texts having different expression plane: in the first case it is built as a chain of signs following each other, and in the second case — as a configuration of co-existing spatial forms and their relations. Such configurations can be considered as specific *spatial texts*, where only these spatial forms and their relations are meaningful, but no meaning is attached to any temporal changes of their material bearers. It is possible to say that a spatial text not only exists in a space, but also forms its *own space* of meaningful relations, whereas it does not have *own time* and exists only in external time, where something happens *with* it, but not *within*

it. Temporal texts, on the contrary, have their own, or internal, time (but not their own space), formed by relations of temporal following between units of their “expression form”. There are also many mixed spatial-temporal texts, which have both of these own form types.

It is important, that specific structure of spatial texts touches the “form” of expression, rather than its “substance” (using Louis Hjelmslev’s terms). That is the point, the difference between “temporal” and “spatial” bearers of meaning is not essential for the substance of expression. Both of them participate in the process of communication by means of a material mediator, for which both space and time are inalienable attributes. Any spatial bearer of meaning changes in time as well as any perception and interpretation of spatial text as psychological processes has temporal structure. But all peculiarities of physical or psychical substance of spatial texts are only the ground for special “semiotic form”, established by spatial codes, each of that is a system of norms semiotizing the space. On the contrary to its bearers, the spatial text is constructed and reconstructed only by means of these codes and their semiotic form. Therefore it does not have any relations, which are not provided by them. In case of temporal semiosis the situation is different: spatial relations here are the elements only of substance of expression, but not of its form. The last includes, on the contrary, as the meaningful units the temporal relations, which in spatial semiosis only exist in the “substance of expression”, but do not mean anything as elements of its semiotic form. The inevitable physical changes in the substance as a rule are not included in the authentic structure of spatial text, and, for example, painting restoration just has to take out all physic results of this temporal being. So the reasons of separation of spatial semiosis are not physical or psychological, but only semiotical: the separation of spatial relations from temporal ones in the semiotic systems and derived texts, where the form of expression is built only by configurations of the spatial relations.

However the time which exceeds the limits of semiotic form of expression in spatial texts, remains, on one hand, in its physical and psychical substance as an important factor of communicative process. On the other hand, the spatial texts get special means representing time in their plane of contents. Correspondingly, it is possible to speak about being of spatial semiosis in time as well as about being of time represented in spatial semiosis.

## 2. Spatial semiosis in time

### 2.1. Peculiarities of temporal being

It is incorrect to think that a specific feature of spatial semiosis is existence out of time. As every process it is performed in time, but it differs by another way of temporal being. Both functioning of communication by spatial bearers of meaning and historical changes of conditions of this functioning have own peculiarities in spatial semiosis. Moreover relations of these two aspects differ here not as deep as in the case of temporal semiosis.

The last exists as a synchronic process of sending and receiving, because usage of signs following each other supposes as an obligatory condition coexistence of a sender and a recipient of a message in a common communicative action (even if this coexistence has virtual character, and act of message creation is reproduced by technical means). On the contrary, this condition is absent in case of spatial semiosis, because it does not need coexistence of participants of communication, but cannot do without coexistence of meaningful units in the space. Thereby communication occurs here as a *diachronic* process divided in two acts performed in different times: creating and “reading” of spatial text.

Separation of these acts in time permits them, first of all, to have different duration, because their synchronizing is unnecessary in the spatial semiosis. The process of text creating can be very long (for example, seven centuries of building of Cologne Cathedral), whereas perception of the text can be very short. Vice versa: a meaningful spatial form can be quickly created (for example, water-color created on a wet paper in technique *alla prima*), but perceived and interpreted during a long time. However, one can find also a temporal correlation between both of these acts: as a rule, more complicated spatial texts demands more time for their creating as well as for their perceiving. Secondly, a long time period can pass between the acts of creating and receiving of a spatial message, and that makes possible not only communication between contemporaries, but also between people, who belong to different generations and historical periods. As the spatial message can outlive its creators it naturally gets to other contexts and to other times. Thereby they can exist not only within the time of creation and perception, but also within historical time. The difference

between synchronity and diachrony themselves is not sharp in spatial semiosis, because, on one hand its functioning has a diachronic character, and, on the other hand, the preservation of spatial text during long time allows to extend this functional connection as far as its spatial bearer exists.

So the structural properties of communicative process in spatial semiosis make possible some of its specific functions. Due to these functions, spatial semiosis is especially favorable or just unique for preservation and transmission of information for “long distances” in time. Therefore the spatial form of representation is irreplaceable for preservation of cultural memory — both personal and collective ones. Moreover, historical time itself arises together with the possibility to fix events in written form that means — together with the possibility of translating of oral speech and all available for its cultural experience by means of spatial semiosis. Thus, fixation of time in the past allows spatial semiosis also to have impact on the future.

The introduction of spatial texts into new historical contexts, where they get new senses, is connected not only with the change of communicated subjects, but also with historical changing of codes, and even of mentality of interpreters. These changes are performed in history to different extent. Several of them are based on the natural grounds, such as psychophysiology of eyesight, which is reproduced on genetic level and only modified in a culture. Such are the synesthetic codes, which correlate some visual sensations of forms and colours with definite feelings of other modalities, as well as the perceptual code, regulating transformation of optical data in a perceptual image of volumetric forms. The codes of this type less undergo cultural influences, than the codes derivative from them, correspondingly, architectonic and perceptographic ones, which have their own cultural history. Some other codes are created in culture and change more quickly, than natural based ones — as, particularly, the object-functional code regulating categorization of recognizable object forms constantly reproduced in culture and connections of these forms with their instrumental functions, — or as the social-symbolic code, endowing the forms with connotative meanings, thanks to which they can indicate the roles of their users in the space of social behaviour (see Tchertov 1997).

The uneven development of spatial codes leads to displacement of senses and ways of interpretation. This particularly regards to the

spatial texts with complex semiotic and rhetorical structure, which requires for comprehension united application of several codes together. Some configurations of these codes and their relations in each case influence the definite way of “reading” of the pieces as a visual-spatial text and conceiving of its senses.

Such complex semiotic structures are typical especially for pieces of art, which interpretation depends on usage of changeable set of codes. From this point of view all history of spatial arts can be considered as the history of using of diverse visual-spatial codes for creation and interpretation of art pieces and changing of relations between them. So the treatment to the art history as a “history of semantic structures” suggested several decades ago (see Wallis 1970) can be re-interpreted as the idea of evolution of visual-spatial codes developed in history to different extent and modified their relations.

## 2.2. Presentation of the spatial text in time

The specific relations of spatial texts to time suppose their regulation on the level of semiotic form in the systems of corresponding codes. The process of text actualization during its perceiving as well as the process of text generation requires special rules providing some conditions of temporal presentation of spatial texts.

These rules are provided at least in cases of several special codes serving for recording of temporal texts in spatial form and their reconstructing in the new contexts. These codes have the rules of correlation between the expression plane of spatial texts with the coded expression plane of texts developing in time. For example, phonetic writing gives the ways of projection of the temporal order of oral speech into spatial axes, as well as the rules of the reverse translation of spatial relations into temporal ones by reading. Its expression plane contains spatial rows of significant that denote temporal successions of phonemes (for example, by interpretation of spatial relations “left-right” as temporal relations “earlier-later”, etc.). The represented temporal relations of phonemes belong to the contents plane of written text and form its “semantic” meaning, whereas its plane of expression contains only spatial relations but not the internal time. However, it is also possible to find some “syntactic” or “grammatical” meaning of this text, related to the way of its temporal

presentation, — because “reading” of the spatial text as a process developing in time needs definite order of its actualization and limiting of liberty by successive transit from one spatial unit to another. The semiotic form of written code sets the direction of these transits and thereby gets to the space, semiotized by its means a quality of irreversibility, making its structure more similar to the structure of oral speech.

The possibility to represent internal temporal relations of oral texts through internal spatial relations of written texts due to their structural similarity differs phonetic writing from other spatial codes — even from some non-phonetic writing, which do not aim to translate temporal sequence of signs into the spatial order. It is true, that culturally educated eye can learn to read signs formed up in lines, for instance, from left to right or from top to bottom, — as in European writing systems. However, such linear reading is a special way of seeing and is not the only norm of visual perception. “Natural” eyesight is able to synopsis and can take many spatial relations as one whole picture, as a simultaneous, but not successive image.

That does not mean that peering into non-written spatial texts has no temporal order. The internal programs of its “reading” are not only in written texts. For example, the system of architectonic code permits perception of spatial relations as a successive process reiterating spatial signals, treated as a “rhythmical order” built in time.

However, temporal “opening” of spatial text during its perceiving can be subordinated not only to the “principle of projection”, which supposes “drawing up” the space in a line, but to be inherent also to perception of the two- and three-dimensional spatial text, which can not be reduced to a line. Many complex architectural buildings can be perceived gradually due to well arrangement, which allows successive transit from one rank of parts to another. So, for example a Gothic cathedral, which silhouette is perceived from the big distance, “opens” for a view all its smaller details as far as they become nearer literally “step by step” and big forms go out of viewing field. In a similar way temporal ordering can be performed also by perception of many other visual-spatial texts (book miniatures, gobelins, ornamented pottery and so on), if their perceiving is determined by the artistic using of means of architectonic and other visual-spatial codes.

A temporal order of “reading” is supposed also in well-constructed depictions, where the lines and tonal contrasts can put a process of



viewing in time and “guides” the glance of viewer into pictorial space in a definite temporal succession (see Florensky 1993: 230–231). So, for example, well known scene of “Banishment from the Haven” in the relief of Berndward’s doors of the St. Michaelis Cathedral in Hildesheim is arranged as a succession of gestures each of which draws attention at first to Adam, then to Eva and at last to the devil; — as well as in famous “Sistine Madonna” by Raphael (Dresden Gallery) a lot of weakly distinguished angels’ heads are opened only for a sight looking into the background after perceiving of the figures clearly silhouetted on the foreground.

But in all these cases the temporal structure of “reading” differs from the cases of reading by lines, because it neither requires irreversibility nor one-dimensionality of the textual space. On the contrary, by the “reading” of a picture, as well as of an architectural construction, the look is moving in a principally reversibly and non-one-dimensional space. The temporal ordering of these spatial texts becomes possible, because they, excluding the temporal relations from their internal syntactic structures, contain nevertheless the means of their presentation in the time of text receiving. As these means are regulated by the spatial codes, they are related not only to the being of spatial semiosis in the external time, but also to existence of time in spatial semiosis.

### **3. Time in spatial semiosis and semiotic means of its representation**

#### **3.1. Time represented in semiotized space**

Together with the means of presentation of spatial texts in time, culture develops the means of representation of time on the semantic level of these texts. The “internal time” in semiotized space is possible only as the time represented by spatial means. Such “internal time” is contained, for example, in a picture representing some depicted events. Their time coincides neither with the external time of physical being of its expression “substance”, nor with the psychical time of the picture creation or perceiving, nor with the time of expression “form”, where it is absent according to the definition of the spatial text. The “internal time” of a picture belongs only to its plane of contents and is

represented together with the depicted space, where some indexes of shown action are given.

The *temporal semantics* of semiotized space includes all three aspects accordingly to three temporal modes: the present, the past, and the future. However, expression of the present has no temporal specifics, and speaking about the representation of time in spatial semiosis it is natural first of all to mean the modes of the past and of the future.

Spatial forms have specific ability to represent something that happened in the *past*, due to “taking out” its image or its signs from the time stream and preserving on its more stable “banks”. Space, as an order of relations between the coexistent things, has a relative stability in time that permits its structures to imprint the past in converted form and to preserve the memory about it. Preserving of the past in the space can occur involuntary, as “natural signs”, or indexes, of past events — tracks of diverse processes imprinted in spatial forms. By these indexes the cultural history can be naturally laid up like geological processes leaving their traces in spatial structures of rocks. So, the structure of territory involuntary imprints the ways of life of its inhabitants, the structure of roads — the connections between settlements, and at least, any print of rolling wheel is an obvious evolvement of a temporal process in the space. But imprinting of time in the space can be developed also as intentional, in specific cultural forms most of which are produced and reproduced deliberately. So the function of tools is imprinted in its form, social relations between citizens are imprinted in the plan of a city, etc. In fact, every spatial artifact preserves traces and indexes of processes, in which it has participated whether as a condition, a medium, or a result.

The spatial text can also point to the *future*. Yet animals can anticipate some future events, using some spatial indexes. Human increases this ability, firstly, interpreting “natural signs” more deep and, secondly, creating artificial spatial signs, which program his behavior in the future. This programming touches different aspects of the activity — from the above mentioned reading of spatial text itself, till various spatial moving and actions, directed by forms and spatial layout of indexes of movement.

This semantic differentiation has also some *pragmatic aspects*, and they are connected with the corresponding important functions of spatial texts. The ability of spatial imprinting of the past in the present

and thereby of preserving the past for the future allows spatial semiosis to perform a function of cultural memory. Another pragmatic function of spatial texts touches the other temporal modus — programming of the future by establishing of some spatial signals and indexes directing body, hand or eye movements.

Both of these functions can be combined and performed by the same sector of semiotized space, where equally signs, signals and indexes of different time modes function. The semiotic means as natural as artificial origin form complex semiotic structures, representing different aspects of time.

Such combination of different temporal modes in the plane of semantics as well as performing different pragmatic functions is typical particularly for the *architecture*. An architectural building can contain indexes of the present conditions of its being, for instance, revealing of internal constructions by its external shape or representing some “static” or “dynamic” qualities. Due to expressive means of the architectonic code a building can look as solid “staying” on the place (as a Greek Temple) or visually “striving” above (as a Gothic Cathedral), or “flowing” together with surrounding it fountains (as the Dresdner Zwinger).

Architectural buildings also give artificial spatial signs, which program behavior of their inhabitants in the future. Each architectural building (which is constructed according to a project) appears yet with a ready “program” directing future movements and behavior of a human in the space arranged by it. Architectural forms have in its syntactic structure some spatial units, which act as signals of reproduced movements. So steps of a staircase serve as signals of definite movements in the future and even as their signs keeping the meaning independent on realizing of these movements.

Architecture has also different ways of holding the past. Every architectural construction is made artificially and preserves more or less clear traces of its creation. Even if rows of bricks point out the time and temporal order of their arrangement.

In semantics of architectural buildings one can find diverse cultural types of time imprinting through spatial forms — from Egyptian pyramids till building forms intentionally reproducing the styles of other epochs (“Stylization”, “Historicism”, etc.). These artificial means of time representation are combined in architecture with the natural traces of physical or historical changes, and sometimes it is

difficult to differ one from the other (for example, the natural deformations and artificially created “Ruins” as signs of the past).

In a similar way three modes of time can be represented by the *picture*, which can serve as a project of the future situation (for example, the planned building), as a drawing of a present object, as well as an imprinting of the past. A picture can “remember” the images of persons or of things carried away by time long ago. As a picture has double space — the depicted and the depicting ones, — it can contain the means of time representation in both of them — the tracks of brush moving in the depicting space as well as some images of past events, people or objects represented in the depicted space.

In some cases the time itself in general becomes a subject of depiction. This occurs in *Vanitas* — a special genre of picture, which collects different visual-spatial indexes of the transitory and taken by time life — old skull, fading flowers, smoked pipe, and other things with spatial marks of temporal changes.

The space of picture can represent even relations between time and eternity. So the picture by Albrecht Altdorfer “The Battle of Alexander Magnus and Dary III” from Munich Alte Pinakothek is divided in two parts representing different: the lower part shows a mass of fighting people, which forms a stream making literally visible a “stream of time” taking out their lives, and the upper part represents an immovable board with inscription fixing a result of this battle remained eternally.

One can see some historical changes in representation of diverse temporal or extra-temporal qualities in different cultures. Unlike depictions in Ancient Egypt, which can be elaborated for transit from temporal to eternal world, or Medieval icon painting, which was intended for uncovering of some eternal for the transient, New European painting is directed more on stopping in time of separate episodes, which become the shorter, right up to “snapshots” of moment in Impressionist’s painting.

### 3.2. Semiotic means of time representation in space

The means of time representation in semiotized space can differ semiotically. They can be *indexes*, for example, the tracks of movement — both naturally formed and artificially held indications of the

past events. They can be signals of movements and actions, which can also have both natural and artificial origin (any wall is a spatial signal of stopping or turning for the moving subject). They can take the semiotic form of *conventional signs*, as, for example, a tombstone is a sign of a last life and memory about it (this sign's function is clearly expressed in Greek 'sema' denoting 'tombstone' as well as 'sign'). Both index-signal and sign (in narrow sense) means of time representation are regulated by different spatial codes, each of them has its own possibilities. Several of these codes mainly give the means for imprinting of the past in the present and its saving for the future. Such is for example the code of writing permitting to fix oral speech. Several other codes contain more signs and signals of the future actions — as for example, the object-functional code connecting object forms with “programs” of their using. The indexes of real or imaginary forces are presented in forms of the architectonic code as if they act in the presence.

Different codes can also interact with each other in a common act of sense expression. It is possible for example in case of *symbols*, which have complex semiotic structure with two and more levels of meaning signified by means of diverse codes. For example “The Tower of the Third International” by Wladimir Tatlin was intended to serve as a symbol of temporal development of the world, using the signs of social-symbolic code connected with relations “upper-lower” together with the means of architectonic code for expressing of dynamics.

The spatial semiosis uses also such rhetorical forms of time representation as *metonymy* and metaphor. The spatial metonymy represents a whole period through some parts left of this time. For example, the Doric column or the whole building of the Parthenon can be interpreted as a metonymy of “classical antiquity”, as well as lancet arch or Gothic cathedral can mean “the Middle Ages”, etc. The spatial objects can also represent time by using some *metaphors*. Such spatial metaphors can be found, for example, in different forms of clocks: moving of sun shadow, flow of water, pouring out of sound or turning of hands in mechanical process become there metaphors, on basis of which the time is indicated.

Diverse means of time representation often combine with each other. The clock can serve as an example of such a combination of different spatial ways of time representation. Indexes of temporal

order are used here also as signals of some actions for a subject; the clock can point out not only the present time, but also the historical time of its creation, turning into a sign of time of their origin or even into a symbol of some historical period. Some tower clock can contain the iconic figures representing following each other periods of human life, etc. Construction of clock itself can express some ideas of time typical for definite historical periods and can be considered in the spirit of Bachtin's ideas as a specific "chronotop". The diverse forms of ancient clepsydra or of sun clocks point out different ways of time comprehension by Egyptian, Greeks or Romans, — as well as the spatial form of sound clock expresses the idea of overflowing of the future into the past through a short moment of the present, which can be found, for example, in Saint Augustine's meditations about time (Augustine 1968: 268–279). In a similar way rotation of wheels in mechanical clocks served as a model of temporal order of universe in deterministic conceptions of Descartes, Leibniz and other philosophers of XVII–XVIII centuries (see Tchertov 1998).

These examples reveal one more and very important way of time representation — formation of its various *spatial models*, — iconic and non-iconic ones — which have some common features or structures with time. The spatial models of temporal structures allow representing mainly some their quantitative features: an order of discrete units or duration of a continual period. Both these cases need different means of representation.

Representation of the *temporal order* is possible, first of all, through its submitting by spatial relations. This representation is performed, as a rule, by usage of the same principle of its projection into the spatial structures, which take place in the above described written code. Such projection occurs, for example, in a face of watch, where the temporal order is represented by spatial relations of circularly arranged indexes differing from each other only with the spatial order. The projection can be performed by different syntactic constructions: the meaningful orders can be separated and built as lineal sign successions arranged along the spatial axe — as a rule, vertical or horizontal one; the spatial order can be cyclical (as in dial) or tabular (as in calendar). The semiotized space has in such cases not only a fixed dimensionality, but also as a rule a fixed direction; therefore it is "semantically anisotropic", because changing of the direction influences the sense.

The *principle of projection* is also used for representation of the temporal order by means of spatial relations in other cases. It can be found, for instance, in the motive of procession often met in the art of Ancient East (Egypt, Assyria, Persia, etc.) — rows of figures arranged one after another and presented in different moments of time. The principle of projection is also appeared in the rows of pictures representing different events of a story separating them in singled pictures. Coordination of temporal and spatial successions is typical for arrangement of narrative pictorial series intended to be drawn in a line — from the relief on the column of Trahan and rows of Bible scenes (as, for example, in mosaics of Saint Apollinare Nuovo in Ravenna) till contemporary comic strips. The same projection of the time succession in the spatial order can take place also within the frames of one picture representing some processes due to stratifying them into a row of moments. In Medieval icon painting and even in Renaissance pictures there was a usual way of depicting of several story episodes performed in diverse moments of time as scenes, which are arranged in different fragments of one space — as, for example, in “Seven joys of Maria” by Memling (Munich, Alte Pinakothek) or in painting series “The story of Saint Ursula” by Carpaccio (Venice, Gallery of Academia). Dissociated moments of time can be smaller and consist of single stages of movement, on which the parts of moving figures are decomposed — as it was made in Futurists paintings, where this “cinematographic” way of depiction became very popular expressive mean. It is essential, that time representation gets especially important for spatial arts of XX century. N. Pevsner and A. Gabo in their “Realistic manifest” (1920) theoretically proclaimed introduction of time in spatial arts as their actual task and practically fulfilled it having created own non-figurative spatial constructions with multiple elements as a spatial equivalent of the temporal order (see, for example, Thomas 1986: 142).

It is also possible to represent *duration* of processes by means of spatial semiosis. For such representation other grammatical forms are necessary, than for projection of temporal order in spatial rows. The duration can be represented — particularly in pictorial series — through the distance between depicted scenes — as, for example, in the miniatures of some ancient Russian manuscripts (see Lihachev 1979: 31). It can be represented also by concentration of different events or states in one picture or even in one figure. An example of such

concentration is well known — a “flying gallop” of horses, depicted by Gericault as well as by many other artists and discussed by many art explorers starting from Rodin (see, for example, Volkov 1977: 134–139).

Projection of a temporal succession in the spatial order represents the time as a homogenous multitude of moments — as if any moment is equal to other one and all their difference is reduced only to places order. However, the spatial means can represent not only general and unified course of time and its quantitative structures, but also its qualitatively differed periods — such as seasons of the year, times of the day, etc. (as, for example, famous sculptures of Medici tomb by Michelangelo). Spatial bearers also preserve the memory about the individual being of concrete persons and unique moments of their life: their birth, death and other significant events.

This memorial function performs, for example, tombstones and any other monuments dedicated to some heroes or outstanding events. However, it is natural, that imprinting of something or somebody individual takes a form of their iconic models, which can, unlike general signs, reproduce particular features of things or of people. This form includes all kinds of depictions, each of them “stops” a depicted and saves its image from disappearance, due to the quality of space to hold the forms of things left in the past (cf. Peirce 1960: 360, about connection of icon signs with past experience). In the same time, there are depictions specially intended to this saving. Such are, for example, death-masks, which make an attempt to imprint last face in more constant substance, and which do it in a different way in diverse cultures: preserving something general and essential in Ancient Egypt or, in opposite, keeping some individual features in Ancient Rome. Such are also the memorial portraits of later ages performed in sculpture, painting or engraving and representing some persons together with attributes of their time. The preservation of particular instants and conditions is performed especially in photograph, which literally “stops” a moment and “takes” its fleeting image from temporal stream for saving in the more stabile spatial form.

The developed cultures besides “primary” spatial forms of time representation like writing or art pieces have also “secondary” ways of artificial imprinting of temporal changes. Their specific feature is ordering of spatial bearers, which already perform the function of cultural memory. Among these “secondary” aggregations one can find



some involuntary appearing formations as, for example, spontaneously formed environment of towns, which contains the marks of diverse events of their centuries-old history. However the cultural memory can be concentrated intentionally in some “reservoirs” of spatial bearers of information, in collections of spatial texts. Various types of these collections can take, in particular, a form of a *cemetery* — an aggregation of tombstones as signs of last lives, of a *library* — a depository of written texts as accumulators of all human experience, or of a *museum* (pinakothek, gliptothek, etc.), as a collection of art pieces and other bearers of cultural memory. Each of them transforms in its own way some temporal traces in semiotized space. For example, museum can be treated as a form of transformation of historical time in heterogeneous cultural space, where the spatial relations between art pieces and historical documents of different ages become a form representing their temporal relations. A new type of such “hyperspace” is formed by *Internet* as an information milieu, which gives perhaps already a “ternary” system of time representation and of cultural memory.

Concentration of the collective memory in diverse forms of the spatial semiosis makes possible the qualitative transformation of culture. The space of its changing is accelerated by appearance of the new technical means of the spatial semiosis — from book-printing to the Internet, — each of them gives new possibilities for semiotized space to keep of the past in the cultural memory, as well as to program the future.

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### **Пространственный семиозис и время**

Пространственный семиозис отличается от временного своими структурными и функциональными особенностями. Значимые отношения между единицами пространственных текстов не строятся по временной оси и не образуют внутреннее время в своей форме выражения. Однако временной фактор остается существенным для пространственного семиозиса, который, с одной стороны, находит свои особые способы существования во времени, а, во-вторых — способы репрезентировать время в пространственных структурах. В отличие от временной коммуникации, где акты приема сообщения должны быть синхронизированы с актами их создания или воссоздания, пространственный семиозис строится как диахронный процесс,

в котором акты создания и восприятия значимых пространственных структур разведены во времени. Эти структурные особенности позволяют связывать людей разных исторических периодов и сказываются на функциях пространственного семиозиса, делая его незаменимым средством культурной памяти. Исключая время из семиотической формы своего плана выражения, пространственные тексты имеют определенные правила своей презентации во времени и семиотические средства для репрезентации временного порядка и длительности в своем плане содержания. В пространственном семиозисе развиваются различные средства репрезентации времени с помощью пространственных форм: проекция временных порядков на пространственные структуры, концентрация различных моментов в одном состоянии и др.

### **Ruumiline semioos ja aeg**

Ruumiline semioos erineb ajalisest oma struktuursetelt ja funktsionaalsetel eripäradelt. Ruumiliste tekstide ühikute vahelised tähenduslikud seosed ei ehitu ajateljel ja ei moodusta sisemist aega oma väljendusvormis. Kuid ajafaktor on oluline ka ruumilise semioosi jaoks, mis, ühelt poolt, leiab oma erilised olemisvormid ajas ja teisalt — aja representeerimise viisid ruumilistes struktuurides. Erinevalt ajalisest kommunikatsioonist, kus teate vastuvõtu aktid peavad olema sünkroniseeritud nende loomise või taasloomise aktidega, ehitub ruumiline semioos kui diakrooniline protsess, milles tähenduslike ruumiliste struktuuride loomise ja vastuvõtu aktid on ajas lahku viidud. Need struktuursed iseärasused võimaldavad seostada erinevate ajalooliste perioodide esindajaid ja mõjutavad ruumilise semioosi funktsioone, tehes sellest kultuurimälu asendamatut vahendit. Eemaldades aja oma väljendusplaani semiootilisest vormist, omavad ruumilised tekstid kindlaid reegleid ajalise järgnevuse ja kestvuse representeerimiseks oma sisuplaanis. Ruumilises semioosis arenevad erinevad aja representeerimise vahendid ruumiliste vormide abil: ajaliste järgnevuste projitseerimine ruumilistele struktuuridele, erinevate momentide kontsentratsioon ühes seisundis jmt.