INVESTIGACIÓN EN TEORÍA ARQUITECTÓNICA

URBAN SPACES IN TEMPORAL DYNAMICS: A SEMIOTIC VIEW

ESPACIOS URBANOS EN DINÁMICAS
TEMPORALES: UNA MIRADA SEMIÓTICA

Leonid Tchertov
ORCID: 0009-0002-4968-7598
International Association for Semiotics
of Space Bonn, Germany
leonid.tchertov@gmail.com

ABSTRACT

The purpose of this paper is to consider, with the methods of spatial semiotics, the communicative potencies of urban spaces and their temporal changes. In semiotic terms, architecturally formed spaces can be described as sets of spatial texts formed and interpreted with the help of diverse spatial codes. The forms of buildings, their places, the borders between areas with distinct meanings, and other spatial features are considered in this perspective as the semiotic means of inter-subject communication. However, their meanings change in time, and this can be described in the semiotic conceptual paradigm as the re-semiotization of architecturally formed spaces —the change of semantics and syntactic constructions of their spatial texts in new pragmatic conditions—. Another architectural context appearing around the historical buildings in the course of time, as well as diachronic changes of spatial codes, participate in these modifications. Thus, a semiotic analysis of the syntax and semantics of architecturally formed texts provides a method for the study of communication trough architecture, not only in synchrony, but also in diachrony.

KEYWORDS
Spatial codes and texts, semiotization and re-semiotization, synchrony and diachrony

RESUMEN

El objetivo de este artículo es analizar, con métodos de semiótica espacial, la capacidad comunicativa de los espacios urbanos y sus cambios temporales. En los conceptos semióticos, los espacios arquitectónicamente formados pueden describirse como conjuntos de textos espaciales formados e interpretados con la ayuda de diversos códigos espaciales. Las formas de los edificios, sus lugares, los límites entre zonas con significados distintos y otras características espaciales se consideran, bajo esta perspectiva, medios semióticos de comunicación intersubjetiva. Sin embargo, sus significados cambian con el tiempo, y esto puede describirse en el paradigma conceptual semiótico como resemiotización de los espacios formados arquitectónicamente —el cambio de semántica y construcciones sintácticas de sus textos espaciales en nuevas condiciones pragmáticas—. Otro contexto arquitectónico que aparece alrededor de los edificios históricos en el transcurso del tiempo, así como los cambios diacrónicos de los códigos espaciales, participan en estas modificaciones. Así, un análisis semiótico de la sintaxis y la semántica de los textos formados arquitectónicamente proporciona el método para los estudios de la comunicación a través de la arquitectura no solo en sincronía, sino también en diacronía.

PALABRAS CLAVE
Códigos espaciales y textos, semiotización y resemiotización, sincronía y diacronía

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Introduction

Architecturally formed urban spaces participate in communicative processes in various ways. They contain signs regulating everyday life, traces of past periods, and conditions for planning future actions. An interpretation of these spaces depends on the diverse semiotic means involved in the information processes trough urban architecture. The ways of such interpretation are changed in time.

The objective of this article is to describe, in concepts of spatial semiotics, the existence in time of architecturally shaped texts and spaces semiotized by them. This subject includes both the synchronic functioning of these spaces in communicative processes, and the diachronic transformations of their meanings due to historical changes of semiotic means in other cultural conditions.

The article begins with a brief explanation of the semiotic concepts to be used in it. Further on, the architectural constructions are considered as spatial texts that are formed and interpreted by particular codes that mediate inter-subject communication in the semiotized spaces of the city. The concept of pre-semiotization is introduced to describe an important part of such communicative processes. The features of communication through architectural constructions in these spaces, their differences from other types of spatial texts, and their specific relationship to time are discussed in the next section. What follows is a sequential viewing of the synchronous actualization of various spatial codes in diverse interpretations of semiotized spaces by users, and of the diachronic changes of the semiotic means used, leading to the re-semiotization of urban spaces. Some methodological remarks and the conclusion are given at the end.

Semiotic Approach to the Interpretation of Urban Spaces

Semiotics considers various carriers of meanings as signs and sign constructions analyzed in *syntactic, semantic*, and *pragmatic* aspects (Morris, 1971). Using the concepts of structural linguistics and semiology developed by F. de Saussure (1959) with his followers, sign constructions can be understood as formations of signifiers linked with their signifieds in a *semiotic system*, which regulates their structuring and interpretation. These constructions of the expression and content planes can be considered also as *texts* in a bright semiotic sense. The semiotic concept of text may be applied not only to products of verbal language, but also to diverse other bearers of sense "to a ceremony, a work of the fine arts, or a piece of music" (Ivanov et al., 1998, p. 38). Each text in this sense is a construction of semiotic means that are syntactically and semantically united and pragmatically connected with some purpose. Obviously, spatial constructions built in the urban environment, and carrying a variety of meanings, are also covered by this broad notion of text. The concepts of general semiotics in its different versions were applied to the field of manifold spatial bearers of meaning in general and to the domain of architecture in particular (see, for instance, Eco, 1998; Pellegrino, 1999-2007; Pellegrino, 2006).

The semiotic means used for the expression of a certain sense through spatial bearers, including architectural constructions in urban spaces, can be described as a complex of *spatial codes*. They are the norms of formation and interpretation of meaningful spatial relations in different ways. Unlike the verbal languages, the bearers of meaning in these codes are not words, but spatial forms, places, borders between them and other spatial elements, which can be connected with certain meanings by the norms of certain spatial codes.

The spatial codes are related to different aspects of human activity and have distinct structural and functional properties. In particular, the *object-functional code* gives the semiotic means for connections between spatial forms of artefacts and their instrumental functions in acts of objects' transformations by subjects. The means of the *architectonic code* express relations between parts of the object's constructions in the force field — differences between the supporting and supported parts, their stability or instability, etc—. At the same time, the *demarcation code* contains semiotic means influencing locomotions of subjects acting among these objects —first of all, the borders indexing the places with different meanings—. The relations between these subjects themselves are expressed by the means of the *social-symbolic code*, which gives connotative meanings to

various visible features of the objects involved in the human activity, and by the means of the *proxemic code* giving meaning to spatial relations between bodies of persons acting in social space. These codes do not cover all the means of spatial semiosis, but they are most important for the creation and interpretation of architectural texts in urban spaces (see more detailed in: Tchertov, 2019; Tchertov, 2023).

Architectural Constructions as Spatial Texts
From a semiotic point of view, particular architectural constructions can be understood as *spatial texts* as far as they are formed and interpreted by means of the above codes with their semantic, syntactic, and pragmatic rules. In a similar way, the entire urban space may be considered as the city text; and this "space-as-text" should be distinguished from the "space-in-text" described by verbal language (see Lagopoulos, & Boklund-Lagopoulou, 2014).

Spatial texts in general have specific *syntactic properties*. Unlike the temporal texts of irreversible verbal speech, or of musical pieces, they do not subordinate to the "principle of linearity" suggested by F. de Saussure (1959, p. 70), and they can have two — or three—dimensional syntactic constructions developing in anisotropic and reversible space. Another Saussurean principle of sign arbitrariness, which relates already to *semantics* of spatial texts, is also not relevant for many of them, for example —in cases of architectural and design products depending on various functional or construction-related factors—.

The spatial texts created by architectural means in the urban spaces can be semiotically analyzed as morphological, syntactic, and rhetorical constructions. The *morphological construction* is composed by reproducible units (morphemes) as a standard formation of a spatial code. Compared with it, the *syntactic construction* is a freer formation of these elements possible in this code. If the morphological and syntactic constructions of various spatial codes are joined in a semiotically heterogeneous construction with a united sense, the *rhetorical construction* is created. It can be called "the rhetorical text", in terms of Yuri Lotman, who defines it as "the structural unity of two (or several) subtexts, which are ciphered using different mutually untranslatable codes" (Lotman, 2000, p. 197).

The abovementioned codes participate differently in the formation of spatial texts created in the urban environment. A column formed in an order system by morphemes of the architectonic code can be considered as its morphological construction, which may be

included in more complex syntactic constructions of buildings considered as spatial texts of the same code. The other morphological and syntactic constructions are formed by means of the object-functional code. For example, the walls, roof, windows, and other details of a house are components of a spatial text formed by means of this code, as well as the bodywork, wheels, and the rest of a car's parts denote other functions in another text. The syntactic constructions of the social-symbolic code can be formed as a result of shaping meaningful places with recognizable spatial forms. Semantically, they can be similar to verbal-logical sentences with a subject-predicate structure. For example, the erection in a socially important place of a statue representing a political person is the spatial equivalent to a verbal sentence with a positive valuation of his activities.

A choice of a desired spatial text from the semiotically heterogeneous construction depends on *pragmatic* features of certain communicative process. This choice is carried out not by senders, but already by receivers of the architectural messages, who are included into interpretation process in a different way than their creators. The receivers of such messages can understand, misunderstand, or in an own manner change the sense supposed by a message sender. For instance, Umberto Eco (1998, pp. 255–258) has shown with an example of the Brasilia city, how the initial sense of architectural texts was changed in the practice of their interpretation by the city dwellers.

Semiotized Spaces and Their Features
Architecture is involved in the communication processes as far as it participates in the *semiotization* of space. It includes the choosing, structuring, and interpretation of meaningful spatial relations according to the norms of certain semiotic systems. They can be different and participate in various ways in the semiotization of the urban territory.

Both the semiotized urban territory as a whole, and its partial areas with different functions can be considered using the concept of autonomous space. A space can be called *autonomous* if the set of spatial relations forming it has its own invariant properties and thereby obeys its own law (cf. Greek νόμος "law"). In particular, the specific norms of behavior in some borders give grounds to consider the bordered area as an autonomous space of a particular type and differ it from autonomous spaces with other norms of behavior. So, the spaces of a temple or a market square, of a theatrical stage or an audience hall, etc. have different norms of behavior at them and can therefore be included in the class of autonomous spaces in this sense.

The city at whole also is endowed with a property of autonomous space if it has its own laws of organization and interpretation. City autonomy can be understood first of all in a legal sense —as in the cases of the poleis-states in ancient Greek, "free cities" in Medieval Europe, or the contemporary territory of the Vatican City—. If parts of a city's territory are given over to foreign embassies, they remain under a right of "extraterritoriality", where the laws of other states apply. Then they change autonomy and are re-semiotized, at least by verbal semiotic means. The semiotized spaces, however, have autonomy not only in this special juridical understanding, but in a wider semiotic sense — as far as they are structured and interpreted in different ways according to the rules of the various codes ordering the diverse laws of behavior—.

The semiotized urban space can also have other semio-topological features. It is *closed* if it is bounded by walls or other means of demarcation code distinguishing the city territory from its surroundings, or separating places with distinct meanings; and it is *open* in the opposite case. The space is *heterogeneous* if the center, the periphery, and various districts are connected with different ways of behavior and have diverse senses in this relation. An autonomous space is *anisotropic* if various of its dimensions are endowed with different meanings. It is also *separated* if a certain order of places, scales of objects, and connections between events are established in it (on the concepts of autonomous and semiotized spaces see more detailed in: Tchertov, 2019, pp. 250-267; Tchertov, 2022, pp. 196-198).

Urban Spaces as Means of Inter-Subject Communication
The city territory can be seen as a multitude of areas designed for diverse kinds of activities. The need for economic ties generates the spaces of the market square, shopping centers or stock exchanges. The need for political organization gives rise to the spaces for popular assemblies, the governors' palace, or the city hall. Collective performances need spaces for circuses, theatres, stadiums, etc. Unlike isolated farmsteads, fortresses or castles, the city contains places prepared for the meeting of many people from various professional, social, and cultural strata. Therefore, it always connects places with different social and cultural functions.

All these places are designed for diverse types of *communication* between their users. Their functions are not limited by the technical providing of certain material and energetic processes, but also include conditions for different ways of information connection and inter-subject communication. It is not only about various street signs or traffic signals, but mainly about the

communicative functions of architecturally designed urban spaces. Umberto Eco, who believed that architecture belonged to the means of mass communication, defined the latter as: "an activity directed at different social groups with the purpose of satisfying their requirements and to persuade them to live in a certain way" (Eco, 1998, p. 236). From this point of view, market places and city offices, railway stations and parks for relaxation, sport complexes and museum rooms, etc. can be considered as means of mass communication inasmuch as they stimulate people to certain ways of behavior and are prepared for diverse ways of communication.
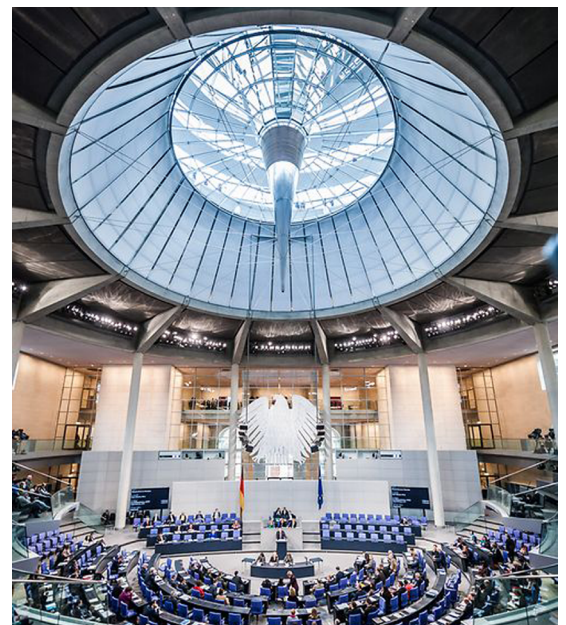
Obviously, the subjects of this communication are, on the one side, the authors of architectural constructions as well as their owners. On the other hand, all people, who somehow see and understand them, are the recipients of these messages. However, often personalities of their creators and owners remain unknown while their interpreters are unlimited. Of course, it is possible to speak about the architectural styles of 'Henry IV' or of 'Louis XIV', but these persons themselves are the users of an architecture bearing their names, rather than the authors of messages sent by it. Even in the case of the 'Haussmann plan' realized in Paris, the person of its author is interesting for the city historians rather than for the people on the streets of Paris. Therefore, a concept of 'mass communication' obtains for the urban spaces a special semantic shade of impersonality: it is an inter-subject communication between groups of people usually without a clarification of personal subjects.

Pre-semiotization of urban spaces
An architectural space can be especially prepared semiotically for certain communicative processes, which literally should have a place in it. A variety of spatial constructions, from the ancient temples to the most modern buildings, create special spaces designed for certain types of communicative actions. Their complete semiotization takes place in time with the processes for which they are intended: for church or civil rituals, for theatrical performances, for sporting events, etc. One can speak in such cases about the *pre-semiotization* of these spaces projected for certain cultural-social communicative processes (the "rituals" in a broad sense), and serving as meaningful spatial accompaniment to them.

This is clear in the case of temple spaces that are pre-semiotized for religious rituals with signs and symbols of diverse codes. The architectural forms, sculptures, ritual clothes, and other spatial bearers of sense create here a joint complex of semiotic means together with temporal verbal and musical pieces.

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Meanwhile, the spaces intendent for quite secular 'rituals' are also pre-semiotized by their own means. For example, the spaces for political discussions can be divided according relations between political forces and have special places for "the left", "the right" and others. So, the Bundestag Hall in Berlin has seats for representatives of different parties separated by aisles. This can be seen as an example of pre-semiotized space, which becomes a complete text only when occupied by certain persons. But it can also be considered as an independent spatial text expressing the idea of the mobility of political space. Another idea of the process transparency is also expressed by this architectural text, as this space is covered by a transparent dome through which those who wish can look at it (Figure 1).

FIGURE 1
The new exterior and interior of the historical Reichstag building in Berlin

Nota. Left. The historical Reichstag building (architect Paul Wallot, 1894) with the new cupola erected in 1999 according to the project by architect Norman Foster. Berlin, Germany; Wright. The interior of the contemporary Bundestag hall with seat allocation for different political parties.

Similarly, the space of a court session is semiotically designed in a different way —with the seats of the judge, prosecutor, lawyer, defendant, jury, and others—. The auditorium rooms in a university are pre-semiotized for lectures by preparing places for teachers and students. The space of the supermarket, with boxes for recognizable wares and checkout areas, is semiotized differently than the space of the circus, the stadium, the playground, and so on.

Some urban objects contain a set of differently semiotized spaces. A common private flat has rooms prepared and pre-semiotized for diverse ways of behavior —a kitchen, a dining room, bathroom, etc—. Even more, the big, socially important buildings contain a diversity of the pre-semiotized spaces. So, a historical palace has rooms designed for diverse functions: the throne hall, boudoir, rooms for the guard and for the ball, a picture gallery, a palace theatre, etc.

The theatre itself is an entire complex of separated and differently semiotized spaces, where the stage, the auditorium, or the foyer are prepared for the different functions and rules of behavior. The auditorium can be semiotized as a hierarchy of seats ('king's box', parterre, mezzanine, gallery, etc.). The stage space is constructed according to scenography projects preserving some general structure (backstage, curtain, 'the fourth wall', etc.).

Such duplication and multiplication of autonomous and separate spaces take place also in galleries and museums, where even each picture combines at least two spaces —the depicting and the depicted, which can also represent the city images, other pictures with their spaces, etc—.

When spatial texts are created as the means of space pre-semiotization, they inform mainly about meanings of the corresponding areas as places intended for communication of a certain kind. Each pre-semiotized space is semiotically completed and becomes fully semiotized when it is added by current spatial-temporal actions. Then, the temporal texts of 'ritual' speeches and chants, together with the spatial-temporal texts of symbolic actions, are interacted with pure spatial texts created by architects and designers.

On temporal features of communication trough architectural constructions
The differently pre-semiotized spaces of city are involved in its temporal changes. Architectural constructions expressing various types of sense shared with other means of spatial semiosis their specific relation to time. Each spatial carrier of meanings is able to retain its spatial configuration and semantic potential in diverse situations independent on its actuality for the recipients, and these meanings can be actualized during different times in various contexts.

Meanwhile, architecture has also features distinguishing it from other spatial ways of expression —written texts, pictures, or design products—. These specific temporal features of communication trough architectural constructions are not quite taken into consideration by their comparison with the means of mass communication. The architecturally formed constructions do not change each other with such speed as others of them do. Unlike cried newspapers headlines taking our attention today and forgotten tomorrow, architectural constructions can accompany everyday life for many generations and cannot relate to this life as changeable news. They are not so much as new messages for them,

but rather conditions for receiving of such messages. The messages of architecture can represent some past events, like a historical painting. However, the events connected with a historical architectural building took place in the same space, which is not separated from the space of a viewer, unlike the pictorial space and time.

Architectural structures also relate to space and time in a different way than design products. Although both architecture and design are prepared for immediate spatial contacts with bodies of people, they are differently related to their personal spaces. Whereas design products —clothes, furniture, devices etc.— are tailored to contacts with certain parts of human body and are often attached to them, the architectural constructions are prepared for freer locomotions in their spaces. At the same time, architectural constructions do not usually have such mobility as design products do. Unlike an umbrella in a hand, which can be easily opened and closed, or a car, which can move freely among other cars and buildings, buildings themselves usually cannot change their configurations and relations between each other. The mobile parts of architectural constructions — opening and closing doors, windows, marquises, etc.— should be related rather to the class of design products, like the umbrella.

Contrary to changeable products of design and spatial-temporal arts as TV or cinema, a space technically organized and semiotized by means of architecture is able to preserve its structure and to resist changes happening in the course of time. They remain on 'the banks' of the 'time river', not involved in the streams of constantly moving people and cars (as it is well showed on the splash screen of the famous movie *House of Cards*).

Such relative independence of architectural constructions from temporal changes allows them the possibility to manifest more clearly one particular feature of the spatial semiosis — a temporal distance between their formation and interpretation by consumers—. A general semiotic difference between sender and receiver of a message is added in the case of architecture by temporal differences between creators and users, who will see it in different social-cultural conditions. If yesterday's news remain of interest for a narrow group of people, the old and ancient buildings continue to surround all people who dwell in this environment. Like texts preserved over time, architectural structures can not only transmit certain messages, but also generate new sense and condensate cultural memory along with modes of interpretation appearing in different cultural contexts

(cf. Lotman, 2000, pp. 155–163). Therefore, even if the architect successfully solves the task of dialoguing with previous 'architectural sentences' existing around his creation, the task of dialoguing with the next generations of people can only be solved by him unilaterally: the architect can believe in certain ways of future life and try to influence them, but he cannot know in principle how this life will turn out in reality.

Interpretation of urban spaces in synchrony
The specific relations of architectural structures to time have different aspects and can be manifested at distinct scales. The temporal features of spatial texts carried by buildings and urban environments reveal themselves already in their *synchronic functioning* during the course of everyday life. Stable syntactic structures of these texts preserving constant semantics make possible manifold ways of their 'reading' in distinct pragmatic situations. A walk along city streets can be performed in diverse successions, visits to different places can have various sequences, and thereby actualization of their constant meanings can be put together in time differently. In each case, the actualization of the meaning is accompanied by the choice by a certain subject of meaningful spatial forms and successions of their interpretations. These changeable temporal structures derive from the pragmatic conditions of the 'reading', and they differ from stable syntactic structures of spatial texts formed by semiotic means of architecture.

A city dweller going about his business can take into consideration the meanings of these texts, but he actualizes in each case only several of them, those that are relevant for his purposes. He chooses paths and directions, which are connected with these purposes, goes in some doors and ignores others, even if they 'invite' him to enter as well. So, a dynamic spatial-temporal text is formed from stable architectural forms. Its creator in this case is the one who chooses the parts of the architectural environment that are meaningful to him at the time. Such dynamic texts are different for various people and even for the same one at different times, at least if it were in the same place.

Diverse spatial codes can participate in the creation of the labile texts created by users in processes of such changeable interpretation. They guide in a different way the comprehension of the urban environment, and can be actualized in a different way in various situations. Depending on the purposes and intentions of users, they become the semiotic means attracted for the interpretation of the urban space. Some of these codes are more related to everyday practical life (as the demarcation and object-

functional codes). Others, to a greater extent, saturate the urban space with all kinds of symbols (as the social-symbolic code) and guide its artistic comprehension (as the architectonic code).

So, the architectural texts co-existing in the semiotically heterogeneous environment can be actualized by diverse interpreters at different moments, in parallel or in sequence. Moreover, in new historical contexts, the former meanings of constructions recede into the background, giving way to more topical ones.

Diachronic changes and re-semiotization of urban spaces
In addition to changes in the ways of the meanings actualization at the synchronous functioning of architectural texts, there are *diachronic* transformations of factors influencing modes of their interpretation.

Various functions can dominate in a city's history. A city may be grown due to the need for economic ties as a market center with commercial offices (like Frankfurt on Main). It can emerge as a religious center around a monastery (like Munich), as a center of power around the royal palace (like Versailles), as a university center (like Princeton), etc. However, a typical property of the heterogeneous city territory is a coexistence of places with diverse functions and a neighboring of temples, markets, craftsmen's workshops or schools as its parts.

The spaces semiotized by architecture for definite functions can also be *re-semiotized* over the course of time, when these functions or some other conditions of their understanding are changed. If space semiotization is an introduction of certain norms in acts of selection, formation, and interpretation of significant spatial relations, its re-semiotization takes place when these norms are changed. Architecturally formed spaces can even be *de-semiotized* if none conditions of the semiotization are saved, and all previous meanings are lost either through their oblivion or complete destruction.

The re-semiotization of architecturally formed spaces can be more or less deep and be related to their semantic, syntactic, and pragmatic aspects. It may touch only the ways of interpretation without any changes to spatial constructions. Such pure *semantic* changes take place, for example, if a living house is turned into a memorial for the last owner, or if a royal palace is transformed into a museum —when all previous design should be saved—. Architectural texts formed in a space that is re-semiotized in such a way do not change their structure, but receive new sense.

The re-semiotization can also include transformations of the architectural *texts* themselves and change their *syntax*. In this case, a re-construction or re-building of old architectural texts takes place with more or less semantic changes. It is possible for the general semantics of a building to remain by syntactic changes of the spatial texts. So, a new building for a railway station usually saves its main function, although it can produce other ways of expressing itself.

Another case takes place if the spatial texts are created with both new *syntax* and *semantics*. This happened, for example, when a new railway station was built in the center of Paris according to the project by architect Victor Laloux in 1900 to replace the Palace d'Orsay, which had been demolished. A new re-semiotization of this architectural construction occurred when it was transformed into an art museum, radically changing its semantics, but saving the main syntactic constructions of the previous railway station (Figure 2). However, in the example of the new cupola for the Bundestag in Berlin (Figure 1), new syntactic constructions were needed to express new sense.

FIGURE 2
-The re-semiotization of the station interior into the d'Orsay Museum, Paris-.
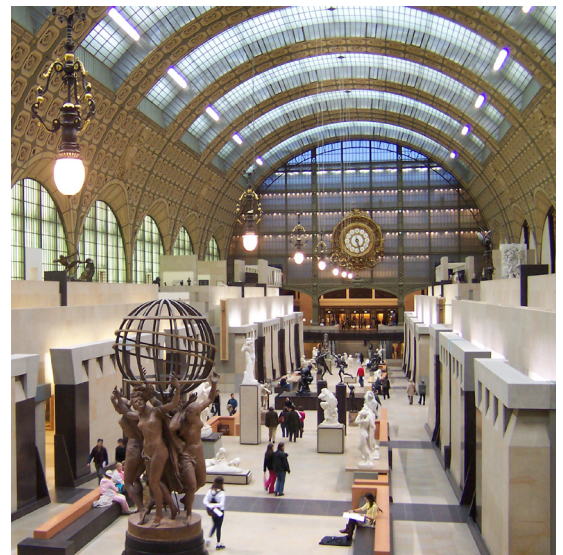
Nota. Left. *The d'Orsay Station*. Paris. Architect Victor Laloux. 1900. Postcard. Unknown author; Wright. *The d'Orsay Museum*, Paris. Contemporary Interior created in 1980–86 by Gae Aulenti and the ACT Groupe (M. Bardon, M. Colboc, M. Philippon). Photographer Alexander Franke. 2004. From Wikimedia Commons.

Even syntactically and semantically unchanged architectural texts can nevertheless change *pragmatic* relations with interpreters, at least due to being themselves changed in time. In addition to the functional variability of these texts for each of their interpreters in synchrony, there are their diachronic changes for other generations of people with new views on life and ways of behavior. These changes of pragmatics to new interpreters are connected with transformations of social-cultural *conditions*, in which the interpretation of old architectural constructions occurs. For instance, an ancient

temple becoming a touristic object ceases to be a place of religious worship and receives the new function of a cultural-historical memorial (Figure 3). Many actual examples of the interpretation changing and of gaps appearing between meanings intended by the creators of city monuments and the ways in which they are interpreted by city dwellers are shown in: Bellentani, 2021.

These changes of conditions include a transformation of the context in a more special sense —as other spatial texts arising around an initial one—. Even if an architectural text is saved in its syntactic constructions, preserving its semantics, the change of the semiotized space that envelopes it influences the ways of its interpretation.

FIGURE 3
The ancient temple Erechtheion *in Athens as a contemporary touristic object, 2022*

A special aspect of diachronic changes in architectural texts and their contexts is connected with transformations of *codes* that regulate the semiotization of space and also can be transformed in the course of time. All of them have different origins. The *architectonic code* is based on still natural connections of visually perceived spatial configurations with kinesthetic feelings. However, this code has also a cultural history —as it is clear in the history of architectural styles—. Unlike it, the various versions of the *object-functional code* have an origin in culture, and they change with cultural evolution. For example, the historical development of moving vehicles —the advent of cars, trams, trains, etc. and of corresponding norms of their using— evokes essential changes to this code in modern times. The more the codes of *social-symbolic* type are changeable in dynamics of culture. The same Figure 1 shows how the pompous forms that should express the stability of state power in the 19th century are contrasted with the light and transparent constructions expressing the priority of democratic values using the new semiotic means of the social-symbolic code.

These spatial codes have also different rates of change. The basic elements and structures of the architectonic code are connected with fundamental features of anthropomorphic space —a diversity of its three coordinate axes for a straightforward human being, relations between supported and supporting parts of construction, etc.—. Therefore, they remain clear in various historical versions of the architectonic code —from ancient order systems to modern and post-modern constructions—. In this relation, the signs of the social-symbolic codes are more changeable, depending on changes of social relations and of fashion, in a broader sense.

In a similar way, the spatial texts of the object-functional code are connected with definite technologies and stages of industrial development. The old factory constructions become outdated for the new technologies and must be either destroyed and thereby de-semiotized, or re-semiotized in a new way, for example becoming exhibition spaces.

Various versions of the demarcation code relate to time running in different ways. There are among them very changeable means —like moving partitions dividing a space differently depending on the actual situation—. However, the city walls like the walls of buildings do not have such mobility, and can be very sustainable in time. To an even greater extent, roads can be stable in time, maintaining their 'banks' in all processes of construction changes.

METHODOLOGICAL DISCUSSION

The analysis of temporally changed urban spaces in terms of spatial semiotics provides the grounds to reflect on some features of the semiotic method itself. They are highlighted by comparison with methods of the Saussurean semiology, on the one hand, and of hermeneutics, on the other.

As it is shown above, the concepts of spatial semiotics can be used for descriptions not only of the communicative means of semiotized spaces functioning in synchrony, but also of their diachronic changes. Both of these aspects of communication in the case of the spatial semiosis cannot be so sharply separated from each other, as it was done in the semiology of F. de Saussure with verbal language. Unlike temporal communication using speech or musical pieces, which need synchronization of sending and receiving acts, communication through stable spatial bearers is continued, even if their receivers belong to other generations. Therefore, the diachrony is essentially involved into structure of the spatial semiosis, where its participants are not connected with a certain moment of time.

However, already in their synchronic functioning, the architectural constructions can be formed and interpreted by several codes together as the united 'rhetorical texts' in Lotman's sense. Moreover, complex text structure appears, when the new ways of interpretation are added in the historical processes. Then, 'hermeneutic texts' are created as some potential sources of uncertain and unlimited ways of 'reading' with previously unknown codes. In these cases, the interpretation process is principally open, and interpreters can use unlimited ways of understanding. A diversity of these ways leads to the 'conflict of interpretations', as Paul Ricoeur (2002) had it called.

Such ambiguous field of interpretation becomes rather a subject of hermeneutic studies, which is not focused on the research of definite sign systems. The hermeneutic approach is connected not so much with the perspective of the message senders (architects, designers, etc.) as with the viewpoints of the various recipients, who use modes of interpretation that the creators cannot in principle foresee. A distinction of these positions and dialogic character of communication through city environment is taken into consideration in theoretic studies of architecture and urbanism (see, in particular, Muntañola, 2022; Pellegrino, 2018).

Therefore, the semiotic method has certain limits, because it intends a description of norms regulating a use of communicative means that are common for various interpreters. At the same time, bound by its own limits, the semiotic method allows to describe the means of communication used by architecture not only in their statics, but also in their temporal dynamics.

CONCLUSION

Thus, the time is an essential factor of the spatial semiosis in general and for the architectural semiosis, in particular. The creators and receivers in it can belong to different generations, which can be temporally greatly distanced from each other. Unlike the texts of newspapers, architectural texts should not inform about current news, but contain more constant messages. One of their main purposes is to provide the ground for a sense of stability, something permanent that remains, when much of the world changes, and where one can return to after traveling far away.

In this perspective, semiotized urban spaces are seen as various architecturally shaped texts formed by means of several spatial codes. Their semiotization may take the form of a pre-semiotization for certain modes of communication in synchronicity, or become a re-semiotization if these texts are syntactically and semantically altered in diachronicity. Further semiotic study of particular spatial codes, of their grammars, and semantics gives to researchers new theoretical tools for analyzing architectural spatial texts, which can be no less precise than the linguistic analysis of verbal texts.

DECLARATION OF AUTHORSHIP
Leonid Tchertov: Conceptualization, data curation, investigation, methodology, project administration, resources, supervision, visualization, writing – original draft, writing – review and editing.

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