
THEORETICAL AND METHODOLOGICAL FRAMEWORK
OF SOCIAL AND ECONOMIC GEOGRAPHY

System-Forming Properties of Space-Time in the Transformation of Sociogeographic Space

K. E. Aksenov

Institute of Earth Sciences, St. Petersburg State University, St. Petersburg, Russia

e-mail: axenov@peterlink.ru

Received November 5, 2013

Abstract—Coincidence of system interrelations in time and space is a necessary condition for the emergence of a space-time system. According to the author, systems in which both the spatial and temporal properties of their elements can change the nature of the system-forming phenomena and processes should be called space-time systems. Transformation of sociogeographic space is such a system. It is proved that not only social phenomena can change their nature due to transformation, but most significantly, time and space by themselves could be treated as system-forming for the subject of this study.

Keywords: space, time, space-time system, transformation, place, sociogeographic space

DOI: 10.1134/S2079970515010025

Despite the view of the unity of space and time borrowed first of all from philosophy and later from physics, geography, and history still exist separately in science. They have not formed a unified methodological dictionary for the centuries of their coexistence, and this is apparently not only because both geographers and historians could not agree with each other. There is a certain essential contradiction. On the one hand, we may as well accept the classical materialistic point of view according to which space and time are the inherent attributes of matter. On the other hand, time and space have essentially different qualities, which can also give different properties to matter. J. Urry designates space-time relations as asymmetric relations, noting, in particular, that, although two objects can occupy one and the same point in time (in different places), they cannot occupy one and the same point in space [19]. Many researchers, who also consider that these attributes are different-measured, note the irreversibility of time and its one-pointedness, which are universal for all phenomena and are the key difference between the properties of time and space [16, 12]. Urry believes that although spatial dimensions necessarily includes time dimensions, time dimensions do not necessarily include spatial ones. Therefore, one should distinguish between “time” and “space-time” dimensions rather than that between temporal and spatial ones [19]. In turn, we, geographers, interested in the development of society, are also engaged in the problem of cognoscibility and controllability. In this field, there are more significant difficulties with methodologies with respect to time than those with respect to space. In any case, these methodologies do not coincide with each other, which, following A. Treivish,

allows us to state that there is no shared “geohistory” [12, p. 17]. Nonetheless, the space-time approach is widely practiced in history, geography, and social science, which often makes it possible to find and study processes and occurrences that may not be defined using chorological or chronological methods alone.¹ The space-time approach thus allows one not only to diversify the palette of applied methods but also to include fundamentally new subjects into scientific analysis. The subject matter of our research—transformations of sociogeographic space—pertains to the type that can be revealed only with the space-time approach. Without claiming here to solve general philosophical problems of science with respect to the given subject matter, we consider space-time attributes as the basis for generating an unambiguous working methodology in the long-term, based on the notion of space-time systems, in order to study transformation of sociogeographic space. For this purpose, we should determine the main notions and properties of space and time that are attributes of systems of interest to us. Below we will try to prove that not only the social nature of transformation, but, above all, space and time themselves have a system-forming value for this subject.

The processes of interaction of society and space-time are more than the relations of type “phenomena—environment” and even of type “phenomena—features.” We proceed from the fact that interaction of spatial (temporal) and social phenomena and processes generates an independent scientific and social

¹ See, for example, the recent discussion of this topic in [13].

phenomenon requiring assessment and study as a particular systemic entirety. The presence of this particular systemic entirety requires generation of specific methods and approaches to its studying which are not reduced to traditional methods of sociology, geography or history.

Transformation of sociogeographic space is a temporal process as a result of which the substances of sociogeographic occurrences not only change but are also replaced by totally new ones (for more information, see [5]). Consequently, when studying transformation in space, we should find and describe elements that change their own substance. How should we fix the state of elements of space so as to determine the state of their substance? What exactly should we consider the elements of space? What are space-time systems?

The primary element of sociogeographic (“subordinate” or substantial) space in which sociogeographic differences take place will be designated by us as a *sociogeographic place* (for more information on subordinate sociogeographic places, see [1]). At every moment of time, a place determines not only the features of expression of economic, social, political, and other factors existing in society, it also forms a particular model of their combination that determines the level and results of their influence on the substance of the phenomenon in question. A place is a quantum of any subordinate space that exists at a particular moment (period) in time. The sociogeographic place is always associated with a specific social occurrence (emergence of certain social substance).² For any other social substance, its place as its primary spatial expression at a given physical point will be different. As an abstract example which helps demonstrate the most vividly the expression of occurrences and processes in question, we can examine the field of an economy that is the most dynamic (capable of changing its substance more rapidly than other ones under external action) and apparent (its expressions are fixed at the everyday level)—small trade and services (for more information, see [1]). So a pie seller who has gone out to sell pies can be considered the primary essential material expression of such a social occurrence as “small peddling.” The specific point of space occupied by the seller may influence the economic success of his small peddling and his personal “survival” as its subject. The set of characteristics of the point that may affect this is associated with the peculiarities of the given sector of the economy. For this specific sector, the characteristics of the number of individuals able to become buyers are important, that is, those who can and are willing to pay 20–30 rubles for this type of product, who are physically able and willing to approach and contact a seller, etc. It is quite possible that it is at that point of space that these socio-

economic space parameters will not allow the existence of this kind of business, because there will be no convenient place for a transport stop and this will be a critical survival factor for subjects of the small peddling branch. However, if at the same point of physical space, a subject of any other branch appears, such as a subject of “external advertising,” then the above-mentioned parameters of socioeconomic space characteristic of the given point will not be significant. In a place where a transport stop and, consequently, selling of pies are impossible, a successful billboard with an ad for a new vehicle model may as well appear. This sector does not require a stop and physical contact with a potential consumer able to pay 20–30 rubles. Meanwhile, the characteristic of the transit stream and visual (not physical!) contact with a potential consumer able to pay 20 000–30 000 dollars for a new car will be critical to the advertiser in wanting to buy this ad space. It appears that the sociogeographic characteristics of one and the same physical point of space may differently influence the formation of new economic substance (occurrence) here, depending on what this substance is.

Note that at some other moment in time, the parameters of significant characteristics of space may change and the properties of the same sociogeographic space for the studied substance may dramatically change. Substance will disappear and *transformation of place will occur*.³ Thus, a temporary event represented by an overhaul of the given highway tens of kilometers from this point may redirect traffic flow for a prolonged period, and both branches in question will not be able to develop in the given space. Upon expiration of the overhaul time, both businesses may develop here again, possibly with new parameters, for example, in case the overhaul will result in a change in the characteristic of traffic flow.

The set of economic, social, political, communicative, and other conditions which distinguish a given place from others, as well as its “external” position (neighborhood, extension, isolation, etc.) with other places and their systems, inevitably forms a specific local *sociogeographic context* at each point of time, i.e., the complex of other places associated with the substance of the place in question.⁴ If a certain context continues for a significant period of time for the substance that forms the given place, then such a context turns into an *environment*. In other words, we consider

³ According to Mints and Preobrazhenskii, this is a change in the function of place, which takes place either due to a change in the very substance forming the place or due to a change in the external effects on this point of space [8].

⁴ Actually, it is the complex of contexts of all objects with similar substance that forms an instant cross section of subordinate geographic space. Here, we agree fully with B.B. Rodoman’s “positional” principle of the formation of geographic space, according to which a geographer should only study the complex of the spatial aspects of relations of an object to other objects that are essential for the object in question [10].

² A. Mints and V. Preobrazhenskii called it “the function of place” [8, p. 124].

time to be a critical factor that distinguishes context from environment. Thus, for the point of where pies are sold, the casual stopping of a tourist bus near it forms a certain sociogeographic context that changes the substance of social occurrence, namely, the selling of pies, which dramatically increases due to tourists. This context disappears after departure of the bus. However, if the travel company realizes that the tourists liked the pies more than the excursion and decides to establish a stop at this point as a constant element of the route, then busses stopping at this point of sales, which are steadily recurrent over time, form the environment. This environment, unlike the context, begins to attract other points of sales, which also begin to offer the product to tourists. These new points become new sociogeographic places, having changed the substance of trade of the first point, and they themselves become the elements of the environment for the first point. Similar processes take place in all spheres and at all levels of social life. In the functioning of any society, the interests of the “local” social environment are an independent significant factor of development of the society.⁵ Therefore, if the context can immediately influence a change in the parameters of the substance that forms a place, then repeating or continuing the appearance of such a context in time forms the environment.

An *event*, defined as the primary change in the substance of social occurrence (phenomenon), is an “elementary particle” of social time.⁶ If the given event does not change the substance of entire social occurrence, but only at a specific place, then it is logical to call this change an *event place*. We have already seen that both spatial and temporal social parameters critically influence the possibility of the existence of various economic substances at a related physical point. Not only the appearance or disappearance of any substance, but also its development is an event (event place). Thus, in the above-described example, not only the appearance of the first point of sales at a place of the physical space was an event place for the social occurrence of the selling of pies, which transformed it into subordinate “sales” space. The arrival of the first bus did not destroy the sales function of the given place of subordinate space, but dramatically changed its

characteristics—all pies were bought, which had never taken place before, and the turnover increased very rapidly. In addition, the marketing value of this point also changed—the pies were appreciated. Therefore, selling at the given point continued; however, its substance change a little. The emergence of one more sales point nearby is a subsequent event place, in addition to subsequent bus arrivals—the substance of the occurrence of selling had a much stronger change—competition emerged. The last event for the occurrence of selling of pies at that place of space occupied by the first point of sales will be its demolition due to the failure of competition with neighboring hot dogs, followed by the building of a café or any other facility of a different branch. The whole process of regeneration of the substance (transformation) of the place consisted of an *interchange of events*. The change in the interchange of events, and in the context, may lead to a change in the resulting space-time parameters of the place.

A question arises: if we say that the place is always connected to the specific time of its existence (or fixation, for the researcher), why not define it immediately as an event place? We consider it necessary to make such differentiation at least by two reasons. Firstly, a place may exist not only in relation to a separate temporal “quantum”—an event—but also to a longer time interval—the period during which the characteristics of the sociogeographic substance constituting the given place do not change in general. Secondly, such a necessity is often present in cognitive tasks and related methodological (possibly even epistemological) approaches. Just like in geography, it is assumed that “unnecessary measurement is cut off” to simplify cognitive procedures pertaining to the term “territory” instead of “space.” It may also be relevant to ignore the temporal parameter in the given case to single out specifically chorological regularities on which the law of chronological processes is not imposed. Thus, for the purpose of research, it is often useless to focus on the time of existence of the fixed (observed) state of the substance in question at a definite point of space, but the spatial extension of this state is important. These are the spatial parameters of extension of a single state of substance that describe the place.

Just as the distance scale is determined for the place, the time scale for the event is determined by imposing the primary change in substance on the physical space and time.⁷ This makes it possible to determine *the proportionality of spatial and temporal characteristics* of different substances. The multiscale of substances also generates the multiscale of places and events as the primary expressions of these substances. The emergence of the fixed structure of chain fast-food restaurant at the place of the first pie-selling

⁵ Smirnyagin draws special attention to the notion of distance, which makes places more or less available between each other for establishing relationships (contextual, environmental or systemic—K.A.). By changing the mode of “accessibility,” it is actually possible to change the spatial extension and the scale of contexts formed by places (in Smirnyagin’s terms, locations) [11].

⁶ Traditionally, Russian philosophers differentiate the notion of phenomenon from the notion of occurrence. While agreeing that the phenomenon represents the unity of occurrence and substance, for methodological simplification, we will further use the term occurrence both for the phenomenon and for the occurrence itself—a form of expression (finding) of the substance of a subject without which indication of a phenomenon is impossible.

⁷ Rodoman suggests working with the notions of geoeternity, geoyear, geoweek, and geoday in these cases [9].

Space-time characteristics of substance of sociogeographic occurrence

| Category | Primary expression (primary element) of substance | Interaction of primary elements |
|----------------------------|---|---------------------------------|
| Sociogeographic space | Place | Context of place |
| Sociogeographic time | Event | Interchange of events |
| Sociogeographic space-time | Event place | Environment |

point pies changed not only the indicators of economic efficiency at the given place of space. The life cycle of the chain restaurant in the enabling environment is potentially much longer than that of the pie-selling point, the spatial parameters of expression of its substance are much broader. Consequently, the scales for fixing these parameters must be measured by means of different scopes of physical space and time.

The generalized representation of the system of above-described categories is given in the table.

Therefore, it may be concluded that *the notion of place (event place) is the basic (primary) notion for analyzing transformation of sociogeographic space*. The properties of place (event place) important for us are as follows:

—the place has a substantial origin and does not differ from its social substance;

—the place always has spatial context but it does not always has environment;

—the temporal interchange of events influences a change in the substance of a place, as a result of which the place arises, develops, and disappears (is regenerated).

Since the notion of transformation of space is one of the central notions for our subject matter, it is useful to understand what happens with the place during its transformation. As we have already mentioned, we refer to transformation only a process accompanied by substitution of one substance of the transforming social occurrence by another. Therefore, in case of transformation of a place, this will mean the inevitable substitution of the substance that generated it and regeneration of the place itself. At the same time, a change in the spatial parameters of emergence of new substance in the given element of the physical space is also possible.⁸ Thus, in the above-mentioned example, the chain restaurant that developed during transformation of the place at the point that formerly sold pies is greater than the latter with respect to all spatial parameters. However, this is not simple emergence of a restaurant in an empty place, but regeneration (transformation) of the old place with a change in sub-

⁸ Rodoman describes a mechanism that he called the “pressure of place,” based on which, under the influence of adverse factors, some objects can change their location, while other objects that are less mobile change their properties and functions (and also substance). Meanwhile, the most unadaptive objects disappear [10].

stance, since the emergence of the restaurant at the very point was associated with the fact that the selling of pies increased its marketing attractiveness in the fast-food buying segment so much that the entire restaurant was able to appear here⁹.

As we mentioned, a place may not only be regenerated but also disappear. It may disappear for at least three reasons. First, not only a certain substance may disappear, but the occurrence may disappear on the whole: if the society suddenly refuses consumption of pies, their selling will disappear too. Secondly, the substance that constituted the given place may change its position in space: the point of sales may move, and this will be quite a different place. Thirdly, the context of the given place may change to such an extent that expression of the given substance will become invisible against its background, merge with the context, and become a part of another place that is more common. Thus, a whole market (temporal or constant) may grow around our pie-selling point, and although the point will not even change its position in space, the context from the aggregate of other places that sell pies and other goods will make our point undistinguished: a buyer will go “to the market” rather than “to the seller.”

A graphic representation of the process of transformation of place is shown in Fig. 1.

Space (and also time) is an inherent properties of a society’s activities. The inherence of space-time property has a dual nature.

First, as we explain below, the material activity of a society is always spatial and does not exist outside the space.¹⁰ The inherence of space-time properties from the society’s activities allows us to work with the categories of subordinate space and subordinate time. From the entire variety of occurrences of both spatial and temporal objects and events, we choose only those of social origin and we designate them *sociogeographic*

⁹ Such transformations are studied and described in detail in [1]. Thus, in the urban environment of the 1990s–2000s, there was a consecutive emergence of an agglomeration of peddling sellers at the same specific points, then kiosks, pavilions, and finally large multifunctional complexes appeared.

¹⁰ According to the radical materialistic approach, not only the material but also the immaterial activity of a society (informational, spiritual, and intellectual activities, etc.) is spatial, since it is surely associated with material (localized in space) carriers (organic and inorganic). Our position is less radical but materialistic.

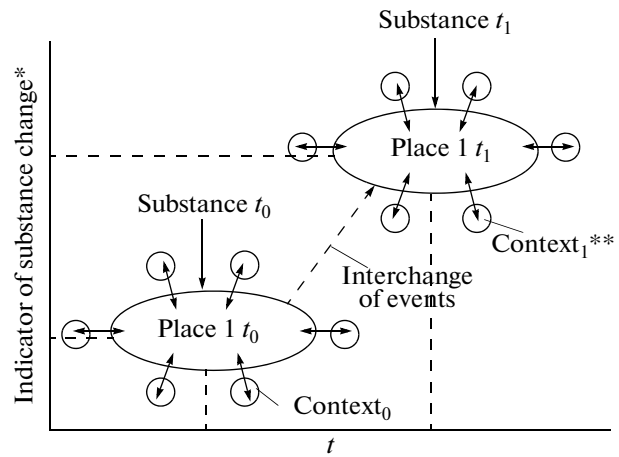
space and time. All social occurrences originating and developing on the basis of social spatial processes are also elements of sociogeographic space. Experience has shown that even experts may have difficulties in switching from everyday perception of space and, especially, time, having physical substance, to space-time consisting of nonmaterial bodies and occurrences. Therefore, we consider in detail the definition of sociogeographic space-time.

In Russian philosophical publications, there is a widely shared opinion that the properties of the social form of motion are just a certain fragment of regularities of physical time and space. For example, there is an approach among political geographers according to which the political (politicogeographic) space is distinguished by imposition of political (politicogeographic) processes on the parameters of physical space: "politicogeographic space is identical to the territory on which, within, and by means of a certain social form, various political and geographic processes, trends, regularities, circumstances, and factors form and operate" [14]; "the political space (territory) is an area where political activities take place" [17].

In this case, we consider it necessary to differentiate the notions of "environment" and "space." Thus, if an "environment" may include components of different spheres and "sectoral" spaces that influence the development of relevant processes and occurrences, "space" is defined by the unity and determinacy of the very occurrences that constitute it. Hegel wrote: "We cannot identify any space which would be an independent space; it is always a filled space and it is not different from its filling anywhere" [6].

Therefore, it can be said that the components of physical space-time are more likely to be included as elements of the environment of a society's activity, being one of the functions in relation to sociogeographic space. Physical space is revealed indirectly in relation to sociogeographic space to the extent of the influence on the performance of sociogeographic processes or in its separate characteristics (for example, neighborhood, interchange, etc., for space; sequence, coexistence, etc., for time). The physical space by itself and its measurements may describe only the physical characteristics of public objects (assumed to be physical bodies): for instance, dimensions of the state territory, extension and configuration of boundaries, etc.

There is also a view according to which space is different from matter and seems to represent a set of relations between occurrences. Supporters of this approach believe that material occurrences exist in space and time. Thus, with reference to Kant, Urry considers that space arises only between at least two objects. It is in this understanding that he insists that space is a set of relations rather than matter [19]. On this basis, the author concludes that society and space cannot "interact with each other," because a society is matter, among other things, while space is not matter



* Economic efficiency, social importance, political result, etc.

** System or complex of places potentially connected with origin of place 1

Fig. 1. Process of transformation of place.

[19]. This approach is close to Newton's definition of space, according to which it is something greater than the objects that fill it. Distance is added to them as an independent participant of interaction differing from the material objects themselves. We actually tend to adhere to Leibniz's approach, according to which any single material object is spatial, regardless of the presence of any other object. Space arises not between objects but in the attributes of the object itself, which can be compared between themselves in spatial categories. In addition, if we consider comparison of different measurements of a separate object as relation, then it will be the relation of attributes of matter within its element, rather than that between the elements of matter. The relative position of two material objects, which the supporters of the described view consider a primary feature of space, is, consequently, not the case and gives "priority" to spatial attributes shown by the measurement of each separate material object.¹¹

Following many researchers (for example, [15], [18]), we conclude that sociogeographic space is not a space of physical bodies in which social activity is carried out; it is the activity itself, assumed from the attributive point of view. *The sociogeographic space is a form of beingness of sociogeographic objects that reflects their coexistences: proportionalities (in the measures of extension, volume, and depth) and relative positions.*¹²

¹¹ Geography has not yet addressed objects with such small sizes that it is impossible to measure the spatial attributes of these objects and compare them with each other.

¹² It is even possible to combine with this approach the notion of geographic mental space suggested by N. Zamyatina, which similarly represents one of subordinate sociogeographic substances [7].

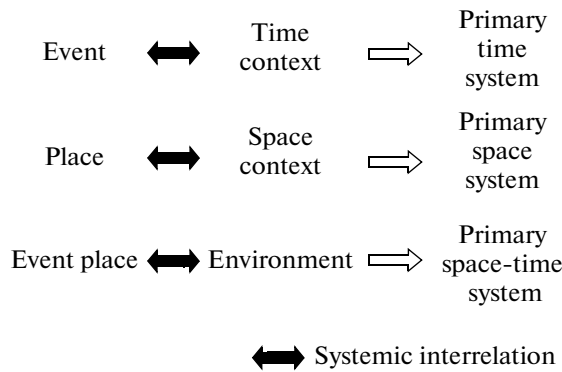


Fig. 2. Category of space-time systems.

In this understanding, space becomes what it is in actuality. Space is not only the cause of differentiation of forms of generation and development of social processes. It has always been and will always remain a means, purpose, and result of a society's activities.

If the former aspect of inherence of the spatial property of a society's activities is universal and does not distinguish an event place from the other elements of sociogeographic space (time), then the latter aspect is specific only for space-time systems. *By space-time systems, we mean systems in which both the spatial and temporal properties of their elements can simultaneously change the substance of occurrences or processes that form the system.* In this regard, such systems are not cognizable and sometimes even undistinguished without analysis of the spatial and temporal characteristics.¹³ The difference of space-time systems from an event place, context, or environment is that the latter are not systems. That is, they do not have interrelations without which the existence of the components constituting them in their given substance would be impossible.

Coincidence of systemic interrelations in time and space is a necessary condition for emergence of space-time system in general form.

Here is an example from the area of policy where a political occurrence arises only when contradiction of interests degenerates into conflict (for more information, see [3]). The conflict between the bearers of capitalist and communist ideology in the 20th century could remain at the level of contradiction if, for example, we examine the interests of an entrepreneur in the United States and a secretary of a party committee in the Soviet Union. The spatial range of their interests was almost not overlapped, i.e. allowed to implement their interests independently from each other. The conflict remained potential. However, if the govern-

¹³ An example of studying such a system is given in [4]. Here, the spaces of personal activities of different social groups are compared. Differences in these spaces can be observed only in time; they are not identified at static time of observation.

ments of the Soviet Union and United States served as subjects of the same contradiction, at that level the spatial spheres of implementation of their interests began overlap and contradiction degenerated into conflict—a systemic interrelation. The Cold War, which represented a global space-time system, was an obvious example of this conflict.

In the same manner as we addressed the categories of space and time through their primary elements, we may also determine the categories of space-time systems (Fig. 2).

Thus, the primary time system arises only from combination of an event and context in time; the primary space system arises from combination of a place and context in space; and the space-time system arises from combination of an event place and environment in time and space. Without the above-described conditions, the emergence of primary systems is impossible; consequently, these conditions are necessary for the emergence of systems. However, it is obvious that not all combinations of events, places, and event places with context and environment generate systems. The aforementioned condition of systemic interrelations supplements the pattern of necessary conditions for the emergence of primary space-time systems. Obviously, the primary systems can form hierarchies and combinations.

This approach makes it possible to study complex multicomponent processes and occurrences that take place in the sociogeographic space, particularly during transformation periods.¹⁴ The possibilities of this approach seem to go beyond sociogeography alone; however, we will leave this a subject for separate consideration.

REFERENCES

1. Aksenov, K., Brade, I., and Bondarchuk, E., *Transformatsionnoe i posttransformatsionnoe gorodskoe prostranstvo. Leningrad—St. Petersburg. 1989—2000* (Transformational and Post-Transformational Urban Space: Leningrad—St. Petersburg, 1989—2000), St. Petersburg: Gelikon Plus, 2006.
2. Aksenov, K.E., Concept of the place in political geography and peculiarities of spatial organization of power in United States, *Izv. Vses. Geogr. O-va*, 1990, vol. 122, no. 1, pp. 99—105.
3. Aksenov, K.E., Space and policy. Conceptual approaches to the study of a special subject area, *Reg. Polit.*, 1993, no. 5, pp. 62—81.
4. Aksenov, K.E., Social segregation of areas of individual activity in posttransformational megapolis: a Case Study of St. Petersburg, *Izv. Russ. Geogr. O-va*, 2009, no. 1, pp. 9—20.
5. Aksenov, K.E., *Transformatsiya obshchestvenno-geograficheskogo prostranstva metropolisa: St. Petersburg*

¹⁴ An example of using such a complex object as social transformation in the Russia of the 1990s—2000s, based on the proposed approach, is given in [5].

- i Moscow, 1989–2011* (Transformation of Socio-Geographic Space of Metropolis: St. Petersburg and Moscow, 1989–2011), Saarbrücken: Lambert Academic Publishing, 2012.
6. Gegel', G., Philosophy of nature, in *Entsiklopediya filosofskikh nauk* (Encyclopedia of Philosophic Sciences), Moscow: 1975, vol. 2, p. 47.
 7. Zamyatina, N., Sense and position in mental-geographic spaces, in *Geograficheskoe polozhenie i territorial'nye struktury: pamyati I.M. Maergoiza* (Geographical Position and Territorial Structures: to the Memory of I.M. Maergoiz), Polyan, P.M. and Treivish, A.I., Moscow: Novyi Khronograf, 2012, pp. 457–476.
 8. Mints, A.A. and Preobrazhenskii, V.S., Function of the place and its change, *Izv. Akad. Nauk SSSR, Ser. Geogr.*, 1970, no. 6, pp. 118–131.
 9. Rodoman, B.B., *Geografiya, raionirovanie, kartoidy* (Geography, Zoning, and Maps), Smolensk: Oikumena, 2007.
 10. Rodoman, B.B., *Territorial'nye arealy i seti* (Territorial Areas and Networks), Smolensk: Oikumena, 1999.
 11. Smirnyagin, L.V., The place instead of location? About shifts in fundamental geographical notions, in *Geograficheskoe polozhenie i territorial'nye struktury: pamyati I.M. Maergoiza* (Geographical Position and Territorial Structures: to the Memory of I.M. Maergoiz), Polyan, P.M. and Treivish, A.I., Moscow: Novyi Khronograf, 2012.
 12. Treivish, A.I., *Gorod, raion, strana i mir. Razvitie Rossii glazami stranoveda* (City, District, Country, and the World. Development of Russia by the View of Geographer), Moscow: Novyi Khronograf, 2009.
 13. Sharygin, M.D. and Chupina, L.B., Approaches to the study of the geographical space-time and the problems associated with them, *Geogr. Vestn.*, 2013, no. 2, pp. 4–8.
 14. Yag'ya, V.S., Space in political geography: problem statement, in *Ekonomicheskaya i sotsial'naya geografiya: problemy i perspektivy* (Economic and Social Geography: Problems and Prospects), Leningrad: Geogr. O-vo SSSR, 1974.
 15. Giddens, A., *Central Problems in Social Theory: Action, Structure, and Contradiction in Social Analysis*, London: 1979.
 16. Lucas, J.R., *A Treatise on Time and Space*, London: Methuen & Co, 1973, pp. 10–11.
 17. Sack, R.D., Territorial basis of power, in *Political Studies from Spatial Perspectives*, Burnett, A.D. and Taylor, P.J., Eds., Chichester, 1981.
 18. Soja, E., The spatiality of social life, in *Social Relations and Spatial Structures*, Gregory, D. and Urry, J., Eds., London: Macmillan, 1985, pp. 90–128.
 19. Urry, J., Social relations, space and time, in *Social Relations and Spatial Structures*, Gregory, D. and Urry, J., Eds., London: Macmillan, 1985, pp. 20–49.

Translated by D. Zabolotny