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URBAN GEOGRAPHY

Integrated Forms of Urban Settlement in Russia, Europe, and Worldwide

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Abstract—This paper explores a set of concepts denoting a hierarchy of integrated systems of urban settlement ranging from the most common urban agglomeration to the still quite uncommon global city area, including concepts such as conurbation, metropolis, megalopolis, megalopolis, world city, and global city. The interpretations of these terms in different countries are discussed. Some terms are widely used, while others are used only in some countries, for example, the *settlement system* or the ~~*backbone*~~ *of urban settlement* in Russia. Some terms are only used by researchers, while others have been turned into categories which are also applied by national statistical and regional planning agencies. Specifically, urban agglomerations are not yet officially identified in Russia, although there is discussion about the possibility of merging some closely located cities into uniform administrative entities, which are called agglomerations. In contrast, in France, a sophisticated and extensive system of terms defining urban agglomerations of different levels has been put in place. This paper is part of a thematic set of four articles published in the "Urban Geography" category of the current journal issue. These papers review key terms and concepts used in geographic urban studies in Russia, France, and other European countries (in addition to the current paper, see also the following articles: *The City, the Countryside, and Urbanization: Russia and the World*, *Types of Cities in Russia and Worldwide*, *Cities and Social Processes: Redefining Terms and Concepts*).

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Integrated forms of settlement, including urban settlements, have rapidly developed in recent decades. They already embrace the major part of many European countries. Their structure varies considerably and depends on historical and cultural traditions, territorial development, and other factors. This structure is getting increasingly complex, which entails multiple problems of spatial planning and management, as well as the organization of local representative and executive authorities, etc. Unsurprisingly, the interpretation of many terms in this area varies considerably, even if they are pronounced in a similar way in different languages. This paper is focused on the interpretation of the concepts used in scientific research, statistics, and management and planning practices in order to refer to different elements of the global hierarchy of supraurban entities.

Urban Agglomeration[1]

The concept of agglomeration is one of the most common terms in regional (territorial) planning and geographical research; however, a comparison of their population, economic potential, and the role in the organization of space requires a cautious approach based on the consideration of national characteristics and statistical definitions.

The most extensive and complex system of terms defining urban agglomerations and their delimitation based on morphological, functional, institutional, and legal grounds might have been developed in France. According to the definition of the National Institute of Statistical and Economic Studies (INSEE), an urban agglomeration or urban unit (*unité urbaine*) is a commune (municipality) or a group of communes, whose territory is a continuous built-up area with gaps of no more than 200 meters between two random buildings and with a population of at least 2,000 residents. The continuous built-up area must include at least 50% of the territory of the commune. The borders of agglomerations are regularly reviewed primarily based on remote sensing data. More than 80% of the French population live in such agglomerations. In this way, specific features of this relatively densely populated Western European country, including small settle-

[1] This part was written by I. Brade, O.B. Glezer, and V.A. Kolosov.

ments with predominant urban functions, are taken into account.

This category is complemented with functional terms: urban pole (*pôle urbain*), or conurbation, which has at least 5,000 jobs and is excluded from the area of gravitation of any other urban pole, and urban area (*aire urbaine*), i.e., a set of adjacent municipalities formed by an urban pole and rural communes, at least 40% of whose employed resident population works in the urban pole. The concept of an industrial and urban zone (*zone de peuplement industriel ou urbain*), whose boundaries are defined through the share of commuting labor workers in the economically active population, and the share of population employed in nonagricultural ~~areas~~, as well as the number of industrial, commercial, and administrative institutions, has constituted another functional statistical and analytical category since 1990.

Predominantly urban spaces—a set of urban areas and surrounding municipalities, in which at least 40% of the resident working population are commuting ~~labor migrants who work in~~ different urban areas—are also defined in national statistics and research. In France there are about 100 such spaces, which would be called urban agglomerations in Russia and other countries.

Intermunicipal cooperation (intercommunalité) is highly developed in France. It was primarily created in order to manage the development of urban agglomerations of different ranks. For this purpose, different legal and institutional forms are used[2]. Some forms of such cooperation are by law advisory in nature; at the same time, they are stimulated with the help of economic mechanisms, while other forms of cooperation are mandatory. The institutions of intercommunal cooperation differ in terms of the range of competences delegated to them by communes, flexibility, and management methods. These institutions are continuously improved. Specifically, in accordance with the law, central parts of the urban poles headed by the communes with more than 15 000 inhabitants and a total population of at least 50000 should form an agglomeration community (*communauté d'agglomération*). Urban communities (*communuatés urbaines*) should be formed in large metropolitan areas with populations of at least 500000 people, whose central city is home to at least 100000 people [6]. Overall, 15 such communities have been created. ~~In~~ A new law introducing new forms of intermunicipal cooperation and management of major urban agglomerations with a population of more than 500000 inhabitants (Paris, Lyon, Toulouse, Lille, and Bordeaux, etc.)—metropolises (*métropoles*)—was adopted in 2010. It ~~has been~~ delegated certain powers which used to belong to the communes included in the area and individual competencies of higher levels of government, such as departments and regions. Metropolitan areas should not contain any enclaves.

In the Polish language, *metropolis* is the main city of the region or country, the most important economic and cultural center, the capital. This definition has not changed for a long time and is given in modern popular dictionaries [23, 24].

In Germany, the term *urban agglomeration* is understood as the area of concentrated population, consisting of interrelated and interdependent settlements, which differs from the surrounding areas by higher density and a larger share of built-up areas. The terms *conurbation* and *metropolitan area* are often used as synonyms. Typically, the agglomeration ~~forms~~ around one or more cities-~~nuclei~~ surrounded by densely built-up suburb belts and more extensive partly rural areas which gravitate to them. With developed and diversified labor and housing markets, urban agglomerations are locomotives of national economic development. Unlike sparsely populated rural areas, urban agglomerations represent the most economically developed territories. In the German literature, the term *agglomeration* is used in a narrower sense to denote large clusters of towns with different functions merged in a single urban area (e.g., Essen-Dortmund in the Rhine-Ruhr region or Halle-Leipzig in the central part of Eastern Germany).

The term *agglomeration* is closely associated with the term *conurbation*, which usually refers to polycentric urbanized areas with overlapping zones of influence and common labor markets (for example, cross-border Franco-Belgian conurbation Lille-Courtrai). Conurbation is often confused with metropolitan areas.

In the German literature, the term *urban area* is used more often than *agglomeration*. It refers to an urban area created around a city or another urban settlement (usually urban municipality) and adjoining suburbs united through a continuous built-up area and interrelated socioeconomical relationships with the city core, often by means of centripetal migration. Urban areas can be part or a subsystem of agglomeration.

In the Russian geographical science, this concept has been comprehensively studied. Agglomeration is understood as a compact spatial group of settlements united by diverse intense bonds in a complex multicomponent dynamic system. The main attributes of urban agglomeration are territorial cohesion of urban settlements grouped around the main city center (there can be 2 or 3 centers, in which case agglomeration is polycentric), and complementarity, which predetermines the development between production (economic), labor, cultural, social, and recreational bonds [9]. There are various estimates of the minimum size of a city–nucleus, which can generate an agglomeration of 100000 to 250000 people. If the upper limit of the specified range and the presence of at least four

[2] http://www.insee.fr/fr/methodes/default.asp?page=zonages/intercommunalite.htm.

urban settlements within the area of the 1.5-hour drive are taken for the criteria, overall 52 urban agglomerations, 43 of which are located in the European part of the country, can be identified at present in Russia [12].

At the same time, the institutional and legal status of urban agglomerations in Russia is unclear. On the one hand, this phrase is widely used in the urban field. Furthermore, agglomerations have been recently assigned a special role in the country's spatial development. Various schemes of territorial planning of urban agglomerations (for example, Samara–Togliatti, Tula, Krasnoyarsk, and other agglomerations) have been implemented and continue to be implemented. At the same time, agglomerations are considered within the limits of administrative districts and their boundaries are not delimitated. On the other hand, this term is not yet regulated by law; neither is it reflected in the Town Planning Code of the Russian Federation. At present, the problem of endowing urban agglomerations with the official status of management entities is highly relevant; however, the question of the appropriate level to which agglomerations should be assigned—state or municipal government—still remains debatable.

Network of Cities, Backbone of Urban Settlement, Settlement System, and a single System of Settlement[3]

The first three phrases (the fourth phrase will be described separately) are widely used in the Russian scientific research and urban planning (territorial planning) practices. However, the interpretations (often implied rather than articulated) of most authors are not sufficiently rigorous, so one can argue that the use of these concepts hardly allows one to obtain the results that could not be achieved otherwise. In addition, similarly to the case of urban agglomeration, these concepts have not been embedded in the legal field; they are not reflected in any legal documents, particularly the Town Planning Code of the Russian Federation, which, ignores the concept of a settlement.

However, a number of scientists (S.A. Kovalev [5], G.M. Lappo, B.S. Horev [15], and E.B. Alaev [1]) have comprehensively developed these notions. This part of the article attempts to update their interpretations by focusing on their interrelations and their role in the analysis of a settlement.

Each of the three concepts under consideration represents both the spatial (or potential) structures existing in reality and epistemological structures. Their interpretation should be based on the root category—settlement. One should note that in the Russian socioeconomic geography and population geography in the second half of the 20th century, this concept was given and is still given significantly greater importance than in the foreign geographical science (therefore, it is difficult to find an English word or phrase which corresponds to the Russian term and concept of "settlement": in Russia this term is used to refer to structures of a different scale (see below), while in other countries and languages, it often refers to the local level and smaller regions). The most important properties of *settlement* are embraced by the following definition: settlement is a variety of settlements, as well as their spatial relations and functional relations (the latter may be absent) within a certain territory.

Network of cities (in countries where, similarly to Russia, there are also townships-urban settlements in addition to cities) is the totality of cities and urban settlements in the territory. *The framework of an urban settlement* is a set of major cities and conurbations. *The settlement system* is the territorial integrity of human settlements between which there is a distribution of functions which entails communication.

It is important to emphasize the fact that the analyzed structures (in the order in which they are listed in the title of this paper) simultaneously reflect *successive stages of the development of a settlement* and its various *aspects*. Furthermore, each structure also changes in time, for example, since 1926, i.e., over the period of less than 90 years, one can distinguish five stages in the formation of an urban framework in Russia [9]; networks and systems are even more dynamic.

Networks of cities have the following parameters: density (or average distance between cities), average population size, uniformity (variation of the population size and distance to the nearest neighborhood), and pattern configuration (mesh, linear, dispersion, etc.). The network analysis only takes into account the size of cities and their spatial relations, while their roles and relations are not important: all cities in the network are equivalent. The notion of a *network* even applies to a dispersed settlement. This fact is paradoxical. It is also paradoxical that a spatial set of cities by itself is called a network given that the latter consists of nodes and lines, a grille. However, in the concept of a *network of cities*, the lines (transport and communication, etc.) remain outside the analysis. They are reflected in the second concept. The *framework of an urban settlement (urban framework)* stands out as a more stable structure compared to the network of cities. The value of the framework is determined by the fact that its units—large and big cities, or agglomerations—are the key territorial socioeconomic nodes, i.e., in fact, it is the framework of the entire settlement and the entire territorial organization of a society and the economy (supporting framework of a settlement [9, 13]). Therefore, the urban framework cannot be studied without connecting the nodes of highway interactions (although it is not common to include these nodes in the framework). Small towns (and townships in Russia) should also be considered as the elements of the framework if they are located at the key points of the socioeconomic area, especially where there are few towns. Unlike the network, the frame-

[3] This part is written by O.B. Glezer.

work is not ubiquitous; it may be absent from sparsely populated areas. In addition, the thresholds of its quantitative parameters depend on regional characteristics. The frame acts as a factor of territorial development. As a result, it is possible to talk about the efficiency of the urban framework contributing to the solution of regional and local problems and an increase in the compactness of a territory [10]. The framework parameters are the same as these of the network of cities, namely, the density and average size of nodes, spatial and structural uniformity, and configuration. The framework also has some features of its own, such as continuity (the absence of gaps) and multiple communication directions (branching) of each node (mean and variation values).

The *settlement system* combines urban and rural settlements. The basic system property—connectivity—relies on the central functions performed by one or more cities (sometimes villages) and is provided by material and information flows and recurrent population commuting with different periodicity between the center (subcenters) and ordinary settlements. A set of functions is defined by the power of the center, which is usually directly proportional to its population size, but also depends on its administrative status and other conditions. Settlement systems are hierarchical; each level has its own temporary cycle of internal interactions and its own spatial dimensions. A settlement system is characterized by the following parameters: the set and power of functions of the center and subcenters, their population, as well as the number of settlements and population in the gravity zone, its size, composition, frequency, and intensity of relations.

Systems are formed at a certain level of maturity of a settlement; those areas where this level has not yet not been reached, the settlement is a network. In today's world, on the one hand, there are fewer completely autonomous settlements. On the other hand, the connectivity of many areas, particularly in Russia, is quite low. The question remains open on the thresholds of the number and intensity of relations which are necessary for the formation of the system.

The settlement system is characterized by a certain order. Thus, the spatial distribution of centers in the system can be ~~characterized~~ by the theory of central places, while the ratio of the cities' population size can be characterized by the Zipf rule (rank–size).

One of the most important properties of these structures, as well as of the entire settlement, is their *poly-scale*. All of them are formed within the territories of a different rank and size: at global, macroregional, national, regional, and local levels.

However, the poly-scale of the structure is specific. The network of cities in ~~this~~ territory ~~only~~ consists of a simple sum of ~~city~~ networks in the territories of a lower taxonomic rank. ~~At the same time,~~ the nature of the urban settlement framework depends on the scale of a territory. First of all, the more extensive the framework the bigger its role in the territorial organization of a country. Secondly, the framework of a given territory is not identical to the sum of frames of smaller areas: the lower the taxon the smaller cities that form the frame, and vice versa, the higher the rank of a territory, the greater the role played by urban agglomerations, conurbation, and megalopolises. So, if we talk about the world as a whole, its skeleton is formed by the cities and agglomerations with a population size of more than 1 million; in Russia, cities with a population of more than 100000, and in the Asian part of Russia, with more than 20000–50000. Settlement systems are not cumulative: a set of integration relations, the functions performed by human settlements and their degree of centrality or periphery depend on the rank of the system within which they are analyzed.

The most common are local and regional settlement systems. It is more difficult to ensure coherence at the national level, especially in a large country. In Russia, systemic links in settlements can only be observed in the case of agglomeration territories and zones of influence of historically emerged interregional centers within a radius of 20–30 km in separate groups of geographically contiguous settlements which are primarily located in the southern steppe of European Russia, the Urals, and Western Siberia [3].

The understanding of ~~city~~ networks, the framework of towns, and settlement systems as ~~stages~~ of ~~settlement~~ development ~~and the related aspects,~~ as well as the identification of the key parameters of these structures, allows one to identify and evaluate the two most important characteristics of settlement. These characteristics are *the degree of spatial uniformity and ~~degree~~ of connectivity*. They define the development (maturity) and ~~balance of a settlement,~~ but cannot always be ~~combined~~. Each of them creates its own preconditions for the social development of a territory. Their roles vary in time and space. Depending on the regional and local conditions, uniformity or coherence come to the forefront.

The concept of a ~~*unified*~~ *settlement system* has a separate standing among the analyzed concepts. The concept of a ~~unified~~ settlement system was developed in the former Soviet Union in the 1970s–1980s. To some extent, it was an attempt to adapt the theory of central places to the Soviet realities [2]. This concept was used for the development of the General Scheme of ~~settlement~~ on the territory of the former Soviet Union in the form of uniform principles for the construction of a *group settlement systems* and the multilevel structure of intersettlement service centers of different hierarchical ranks ~~(all-union, regional, and local)~~ throughout the ~~country.~~ The purpose of creating such a structure was to ensure the equal living conditions in urban and rural areas, as well as in different parts of the country. The concept was utopian, because it largely neglected the regional and local conditions for the formation of a settlement.

Metropolitan Areas[4]

In the last decade, the concept of *metropolization* has been increasingly used in geographic urban studies. Metropolization is understood as the process of an increasing concentration of social, cultural, and financial capital, modern forms of economic activity, and the creative potential in the most powerful hotspots of the global socioeconomic space.

Similarly to other countries, major Russian urban agglomerations are facing the challenges of globalization and its implications, such as the concentration of resources in a few administrative centers, mass migration, social polarization, spatial segregation, as well as gentrification of some urban areas and degradation of others. The hypertrophic growth of Moscow as the country's administrative capital and as a global city is one of the main factors of the growing regional disparities in Russia. Despite the prominent role of Moscow, the benefits and costs of globalization can also be seen in other Russian regions, primarily in the cities with a population over or close to a million. The place of the largest cities in the territorial structure of the country has changed significantly over the past two post-Soviet decades. Specifically, their contribution to the country's economy has increased. Due to the arrival of large companies in cities with a population of a million and consolidation of regional trade, the weight of these cities in retail trade has increased significantly; the share of these cities in housing construction has also grown, which points to income growth and demand. Regional centers by far surpass other cities in terms of population quality indicators, variety of functions, the level of consumption, and the availability of administrative resources which are of particular importance in the Russian context. According to the data for 2008, the major regional centers accounted for about 9% of the population, more than 20% of services and 18% of retail sales, as well as 13% of new housing.

In this context, a particularly relevant question is to what extent can the adaptation of the Russian capital and regional metropolises to the new socioeconomic and political conditions be described by universal models, and to what extent an appeal should be made to unique factors and Russian identity.

The answer to this question depends on the possibility of applying the European experience of the regional and urban policy in Russia. However, it is impossible to come up with a justified response without international comparisons, primarily with urban systems that have emerged in the countries with centralized control and the strong domination of capitals. These are primarily the countries of Eastern and Central Europe, as well as France.

[4] This part was written by V.A. Kolosov.

Metropolis[5]

The term *metropolis* is derived from the Greek word *polis* and *meter*. Originally, it was meant to describe a city with colonies. French dictionaries interpret such etymology as the reflection of the relationship between domination and subordination. For example, the *Petit Robert* dictionary interprets the concept of *metropolis* as the main city (e.g., *economic metropolis*). Nicolas Marquis de Condorcet, a French mathematician and philosopher of the 18th century, wrote: "Alexandria is the metropolis of sciences." The term *metropolis* has also political and historical connotations (metropolis/colony). It is also used as the name of a hierarchical unit in the organization of the church (according to the Russian spelling, mitropoly or archdiocese). In France, this term has been used since the launch of territorial arrangement policy in the 20th century. Specifically, it was used in the 20th century as part of the phrase *balanced metropolis* (*métropoles d'équilibre*) to refer to the centers which since 1964 have been established based on large cities as an alternative to the undivided domination of Paris. In French, as in English, following the construction of a subway in Paris, the noun and adjective *metropolitan* (the reduction of the original title *metropolitan railway* (chemin de fer métropolitain) have become deeply enrooted in speech. A short word *metro* has become widespread since 1891, even before the commissioning of the first stations of the Paris Metro in 1900.

In geography, a relative consensus has emerged with regard to the term *metropolis*, as reflected in the corresponding dictionaries. It is understood as the main city, dominating a vast territory due to its size and influence on a regional, national, and international scale [16]. Usually the reference is made to the political and economic domination of the city, but it can also be cultural and independent of the population size.

The term *metropolization* emerged in French in the second half of the 20th and became widespread in the 1980s–1990s. Locally, it denotes the area of influence of the largest cities with a complex structure consisting of not only the central city but also many other centers. Globally, this term refers to the concentration of various spheres of activity and population in major cities as an expression of the hierarchical structure of the network of cities in the context of globalization [22].

In Polish, the term *metropolization* was used by a geographer, P. Kortselli, in 1969. Specifically, it was used in an article about California to refer to an urbanization phase, i.e., more or less in the same meaning as in the French articles of that time [20]. However, in the Polish literature, the term has sometimes a negative connotation: in terms of development, in the Pomerania region, metropolization is viewed as a weakening of normal relations between major cities

[5] This part was written by L. ~~Codroy~~ de Lille.

and the countryside in a particular region because higher priority is assigned to the links with other major cities.

In Polish, the term *metropolitan area* corresponds to concepts of *obszar metropolitalny* or *metropolitarny*. The use of these concepts in the lexicon of geographers and territorial arrangement experts is an innovation. During the socialist period, the only official category was the *city*. There was no commonly accepted definition of urban agglomeration. Different interpretations of the term corresponding to the Polish realities have been discussed since the 1970s.

However, in the 1990s, the urbanization process has become considerably complicated. Therefore, geographers have proposed the definition of a metropolitan area as a vast system of resettlements, various parts of which are included in different administrative units, including at least one major city and an urbanized area functionally linked to it [18]. The definition of a metropolitan area was introduced in the law of March 27, 2003 (Koncepcja Przestrzennego Zagospodarowania Kraju). According to this document, it is an area that includes a large city and functionally related neighborhood, whose population is at least 500000, while the population of the core is at least 300000. According to this law, there were nine fully formed and four potential metropolitan areas in Poland. The latest documents present other numbers: the National Territorial Plan for 2007–2013 and the Concept of National Planning until 2030 identify five and twelve metropolitan areas, respectively.

In the early 1990s, the European Community created the Committee on Spatial Development, the predecessor of the current regional General Directorate of the European Commission (DG Régio). This Committee has developed the concept of *polycentricity*, which initially was not accepted, but later became an indispensable foundation of the territorial development in the European Union and many of its member states. In 1999 this concept provided the basis for the European Community Spatial Development Scheme. The purpose of the concept was to avoid the overpopulation and economic concentration in the geographical and functional center of the European continent and, in contrast, to contribute to a balanced territorial structure formed around several poles of development. The principle of *polycentricity* should theoretically be applied at all territorial levels: European, national, regional, and even local. This circumstance creates the uncertainty of its content, which may ultimately be used to justify a policy of strengthening the competitiveness and integration of territories.

In geographic urban studies, *metropolization* is understood as a process of the increasing concentration of social, cultural, and financial capital, modern forms of economic activity, and creative potential in the largest cities, which have a favorable position of the *nodes*, due to their geographical location, and the existing system of connections and relations. Powerful urbanized areas become centers attracting capital, entrepreneurial projects, and people. Establishing a single urbanized area may provide new opportunities for the development of a society (a new quality of life) and its economy, diversification, and the improvement of investment attractiveness by the creation of a more diverse labor market, more capacious consumer market, as well as the concentration and coordination of priority basic infrastructure projects.

World City[6]

World city is a major center which plays a prominent role in international development (development of the international community); a city which, according to P. Hall, concentrates a much larger share of the most important activities than the share of its population.

This term was first introduced in scientific use by British urbanist P. Geddes. Used in *The Evolution of Cities* (1915), this term referred to a special role of several major centers in the world economy and international relations of the early 20th century. The author included in the list of such cities the leading capitals of Europe such as London, Paris, Berlin, and Vienna, as well as a number of centers in the United States, namely New York, Boston, Chicago, and Philadelphia. Later, this phenomenon was studied in many works, including the works of British scientist P. Hall and American researcher J. Friedman. Nowadays, this term is often used in sociology as a synonym of subcultural mixing places and in geographic urban studies as a global city, which we do not always consider correct.

It is proposed to use the term from a philosophical perspective, rather than from the monodisciplinary viewpoint, in order to denote centers that have reached the highest level of the urban hierarchy and have played an important role in the development of human civilization.

In this case, the list of the world's major cities include the following categories of cities:

—the centers of the ancient world (preserved or vanished), empires, and metropolitan spheres of influence which included vast territories inhabited by many people (Babylon and Rome);

—the largest religious centers which have for centuries been forming the awareness and culture of huge masses of people (Jerusalem, Mecca, etc.);

—the centers of the world economy, concentrating financial, industrial, technical, and partly cultural power, as well determining key trends of business activity at various stages of spatial and temporal world economic development (Venice, Antwerp, Genoa, Amsterdam, London, etc.);

—a number of powerful geoeconomic and geopolitical centers responsible for the fate of the interna-

[6] This part and the following sections were written by N.A. Sluka.

tional community (e.g., Moscow and Washington in a bipolar world).

In all these cases, the global city is, first of all, a unique and individual phenomenon. Secondly, the scope of its influence is clearly planetary or has at least macroregional coverage. Thirdly, the global city epitomizes special power, whether it is part of an ideology, religion, military power, innovative economy, etc. Fourthly, it acts as a hegemony and functions as a steering and control element within another subdued territorial social system. Fifth, the spatial organization of the system has a distinct center–peripheral character. Finally, dominant unilateral or bilateral ties support the system.

Global City

A global city is a postindustrial center, deeply integrated into the international community and largely tapping into the potential of interactions within the global urban networks for its development. This term was first introduced in the early 1990s in the work of S. Sassen, Professor of Sociology at the University of Chicago, which was based on two major rationales: (1) to find an alternative embodiment to the term *world city*, the term for the type of cities that have existed for centuries, and (2) to highlight the global nature of the current social development period and the specificity of the formed urban structures.

Internationalization processes, first in the field of the world economy, among others based on the networking structures of TNCs and TNBs, and later in other activity areas of the international community, has caused, on the one hand, a gradual reduction of interests in the overconcentration of all types of business activity. On the other hand, this process has increased the attention paid to the rapid increase in the speed, intensity, scope, scale, and diversity of contacts and relations, whose core, according to the historical mission of the territorial organization, was formed by the city. Serving as the foci of real and virtual connections, they were quickly spatially organized into specific associations and corporations, which were called in the literature @urban archipelagos@—a large set of geographically differentiated global cities, with different histories and spheres of influence, mismatched on the population size, with functionally different profiles, but closely interacting at a planetary level. All elements of this corporation rightfully claim to be called global cities.

In other words, from our point of view, there is no such thing as a separately taken global city and this is its fundamental difference from the world centers (uniqueness and individuality are contrasted on a mass scale). At the heart of the modern understanding of the global city lies the principle of cooperation and mutual benefit. At the same time, one can take for granted the fact that the global city is more a result of global corporate decisions than the teamwork of urban or other type of authorities. Furthermore, the global city is a single planetary element, which is often called a transnational urban system closed by multilateral relations and consisting of a variety of centers with totally different "dimensions" and "stuffing." It is based on the superposition of networks of different origins and the correct location which allows the city to progress even in the absence of any major traditional or exotic resources.

One can distinguish at least two lines in modern research on global cities, originating from a relatively narrow and broad interpretation of the phenomenon. The first one is based on the traditional, geoeconomic approach that focuses on the understanding of global cities as the leading centers of manufacturing and control of the world economy, which are closely interrelated and at the same time competing with each other. The second is largely based on the world-system approach and takes into account the international importance of cities and connectivity across multiple arenas of collective action: geodemographic, geopolitical, geoeconomic, and sociocultural. In both cases, the ranking method is highly common, but the studied quantitative and qualitative indicators of global cities are different. Four cities, namely, New York, London, Paris, and Tokyo are traditionally placed on the top of the vast majority of ratings, irrespectively of the applied criteria.

To date, a number of scientific schools has emerged. The greatest contribution to the theoretical development and empirical support for the concept of a global city has been made by an international group of scientists, which was formed in the late 1990s based on Loughborough University in Britain, led by P. Taylor (Globalization and World Cities Study Group (GaWC)). This group justified a number of key features (system of indicators) of global centers (primarily, international significance and connectivity within the network), defined the major list and hierarchy of cities, and developed several classifications. One of the latest classifications includes 111 truly global centers of different rank and 68 emerging ones (Table 1).

In territorial terms, global cities are distributed unevenly and exactly match the geography of most economically developed and rich countries. There are three main areas of concentration: Western Europe, North America, and Asia Pacific, each of which has its own specifics.

Megapolis

Megapolis (from the Greek Megas—big, a prefix to form the names of multiple units equal in size to 10^6 initial units, and from the Greek, polis—city) is a major form of urban settlement, a city with a population of over one million inhabitants, a city with a population of at least a million.

The term *metropolis* is an element of a hierarchical series of municipalities, whose dimension and rank are

Table 1. Global city ranking by P. Taylor, 2010

Category	Cities
Alpha ++	London, New York
Alpha +	Chicago, Dubai, Paris, Tianjin, Singapore, Sydney, Tokyo, Shanghai
Alpha	Amsterdam, Beijing, Brussels, Buenos Aires, Frankfurt–am–Mein, Jakarta, Kuala Lumpur, Los Angeles, Madrid, Mexico, Milan, Moscow, Mumbai, San Francisco, San Paolo, Seoul, Toronto, Washington
Alpha –	Atlanta, Bangkok, Barcelona, Boston, Dallas, Dublin, Istanbul, Johannesburg, Lisbon, Melbourne, Miami, Munich, Delhi, Philadelphia, Santiago, Taipei, Vienna, Warsaw, Zurich
Beta +	Athens, Bangalore, Berlin, Bogota, Cairo, Copenhagen, Dusseldorf, Hamburg, Houston, Manila, Montreal, Prague, Rome, Stockholm, Tel Aviv, Vancouver
Beta	Auckland, Beirut, Bucharest, Budapest, Cape Town, Caracas, Chennai, Guangzhou, Ho Chi Minh City, Karachi, Kiev, Lima, Luxembourg, Manchester, Minneapolis, Montevideo, Oslo, Riyadh, Seattle
Beta –	Abu Dhabi, Birmingham, Bratislava, Brisbane, Calcutta, Calgary, Casablanca, Cleveland, Cologne, Denver, Detroit, Geneva, Guatemala, Helsinki, Lagos, Manama, Monterrey, Nicosia, Osaka, Panama, Perth, Port Louis, Rio de Janeiro, San Diego, San Juan, Shenzhen, Sofia, St. Louis, Stuttgart
Gamma +	Adelaide, Amman, Antwerp, Baltimore, Belgrade, Bristol, Charlotte, Cincinnati, Doha, Edinburgh, Glasgow, Hanoi, Hyderabad, Jeddah, Kuwait, Lahore, Nairobi, Portland, Riga, San Jose, San Jose, Tunis, Zagreb
Gamma	Almaty, Columbus, Edmonton, Guadalajara, Indianapolis, Kansas City, Leeds, Lyon, Phoenix, Pittsburgh, Rotterdam, San Salvador, Kyoto, Santo Domingo, St. Petersburg, Tampa, Valencia, Vilnius
Gamma –	Acre, Austin, Belfast, Colombo, Curitiba, Durban, Georgetown, Gothenburg, Guayaquil, Islamabad, Ljubljana, Marseilles, Milwaukee, Muscat, Nagoya, Orlando, Ottawa, Porto, Porto Alegre, Pune, Richmond, Southampton, Tallinn, Tegucigalpa, Wellington

primarily determined based on the demographic criteria, such as the population size, excluding socioeconomic dimension and functional load. This term occupies an intermediate position between the terms *big city* and *megalopolis*. In some cases, it may be used as an analog of *megacity*—a term which entered the practice of UN experts in the 1970s, initially in order to refer to major cities with a population of more than 8 million and later with a population of more than 10 million. This term is particularly frequently used in the media, but it has not been widely used in the scientific literature until recently.

Megalopolis

Megalopolis (megalo from the Greek genitive of megas, megalus is a large city or polis) is a supersized form of settlement, which is formed via the fusion of peripheral areas of several urban centers primarily along transport corridors. The term *megalopolis* was first introduced by geographer Jean Gottmann in the 1950s, who applied this concept to the almost continuous strip of housing, stretching from Boston to Washington (United States), by analogy with the city of Megalopolis in ancient Greece, which had emerged from the merger of more than 35 settlements. This term closes the hierarchical range of local territorial urban entities, whose dimension and rank is primarily shaped by demographic criteria and the population size, without taking into account socioeconomic dimension and functions. This term can be used as an alternative to the terms *metroplex* and *metropolis*. According to K. Doksiadis, megalopolis is the largest and most advanced form of settlement, a kind of urban development stage on the way to ecumenepolis—a global city, which is a global web of urbanized fringes.

Compared to other forms of urban settlement, megalopolis is distinguished by the size of the territory, demographic potential (according to Jean Gottmann, over 25 million people), area-linear morphological structure, as well as the specific model of distributed socioeconomic and density indicators ("wavy" on the major axis and "belt" in the cross-sectional view). Most researchers recognize that by the nature and intensity of economic relations, megalopolis is not a profoundly internally integrated system. Rather, it is split into separate, more closely interacting structural units. Its degree of integration is lower than that of urban agglomeration, which arises based one or two urban centers. In view of this fact, megalopolis represents an incomplete form of integrity.

In the early 1980s, the ekistics center of Athens distinguished 66 megalopolises, including 43 existing and 23 emerging ones, with a total population of 1.4 billion. It was assumed that by 2000 this number would surpass 160, so that megalopolises would concentrate half of the world's population. However, to date, the existence of only six megalopolises is recognized (Table 2). Three of them are located in the United States, two in Europe, and one in Japan.

Table 2. Largest megalopolises in the developed countries of the world

The name of megalopolises	The main centers of megalopolises	The number of agglomeration	Area, in km^2	Population, in mln.	Density, pers. per km^2	Extent of the main axis, km
Northeast (Bosvash)	Baltimore, Boston, Washington, New York, Philadelphia	40	100	45	450	800
Lakeside (Chipitts)	Detroit, Cleveland, Pittsburgh, Chicago	35	160	35	220	900
California (San San)	Los Angeles, San Diego, San Francisco	15	100	18	180	800
Tokaido	Yokohama, Kawasaki, Kyoto, Kobe, Osaka, Nagoya, Tokyo	20	70	55	800	700
English	Birmingham, Liverpool, London, Manchester	30	60	30	500	400
Randshtadt	Rhine, Rhine–Ruhr, Ruhr–Main	30	60	30	500	500

Some researchers considered the emerging megalopolises both in developing countries and in some developed countries (for example, the urban axis Windsor–Quebec in Canada, which stretches for 1,200 km and covers an area of 170 km^2; and the urban area in the Po Valley in Northern Italy, with the main center in Milan). Five of them are located within the populous and rapidly urbanizing Asian continent, while two are in Africa and Latin America. In Asia, three megalopolises are formed in China within the densely populated and economically developed coastal area based on the leading economic centers of the country. The capital megalopolis is intensively developing along the Beijing–Tianjin axis; two other megalopolises are being formed along the Shanghai–Nanjing–Zhengzhou and the Guangzhou–Shenzhen–Hong Kong axes. In Indonesia, the crown of agglomerations in Jakarta and Bandung looks very promising. Less definite are the contours of the Vizagmahangar megalopolis which neighbors Bangladesh and India. On the African continent, the largest urban habitats are emerging in Egypt (Cairo and Alexandria) and Nigeria (Lagos–Ibadan). In South America, rather consolidated entities stand out in Brazil, specifically in the areas under the influence of the Sao Paulo and Rio de Janeiro agglomerations, as well as in Argentina—in the estuary of the Rio de la Plata and the constellation of cities in the agglomeration of Buenos Aires.

Megalopolises in developing countries are much smaller than those in developed countries by many quantitative characteristics, including a much smaller number of cities with at least a million inhabitants, the average size of the territory, and the length of the main axis. They also differ by distinct mono- or bicentricity. At the same time, they are quite comparable in terms of the accumulated demographic potential and clearly stand out by their much higher population growth rates.

Global City–Region

A global city–region is a powerful cluster of cities of different size and specialization with an extensive adjacent periphery, ~~consolidated~~ based on, on the one hand, agglomeration and disintegration effects, and on the other, the efforts to struggle against threats (challenges) and take advantage of globalization.

The term appeared in the literature in the late 1990s, particularly in the works of the American geographer A. Scott. This phenomenon is still insufficiently studied; its interpretation varies significantly in the scientific literature. This is due to both the complexity and multifaceted positions of the initial research. In general terms, it is possible to distinguish between two main approaches in the identification of global city–regions.

The first, less developed, approach emerges at the conjunction of two disciplines—geographic urban studies and globalism; it is largely based on the theory of global cities. The region is interpreted as an element of global space, the core of the territorial organization of the world economy and the whole world system with all conglomerates of its international connections and ~~relation~~, as well as the ins and outs of competitiveness. The city itself, its surroundings, the local effects of globalization, and various other aspects of regionalism are usually assigned a secondary position.

The second approach is more frequent in foreign scientific works; it is based on classical developments in the field of urban geography and ~~country~~ studies. This approach is focused on the assessment of the geographical features of "sprouting" and functioning of urban mega-structures, manifestations of globalization, and implementation of innovative resources in the context of urban/regional localities. It does not imply any world–system~~ic~~ vision of the phenomenon, including, for example, the importance of a global communication conglomerate.

Under the second approach, the concept of mega-regions developed by a group of American scientists led by R. Florida is one of the most interesting and empirically tested. By definition, a mega-region is a geographic urban polycentric system with a unified natural, historical, cultural, and socioeconomic foundation, whose elements are closely coordinated and integrated by production, labor, information, and other types of bonds. Three major criteria are used for the identification of mega-regions: Illumination of the territory, which is clearly visible in the night space shots of Earth, a population size of more than 5 million, and a GDP of at least USD 100 billion. Nearly 40 entities, which are predominantly concentrated in three habitats—North America, Western Europe, and Asia-Pacific—satisfy these conditions.

Anyway, in most cases, global urban areas are understood as objectively existing, extensive, and highly urbanized habitats with a population of dozens of millions, a strong economy (a GDP of billions and trillions of dollars) and a huge social and cultural potential, which plays a crucial role in the national, regional, and global development. Their prototypes are megalopolises, which have arisen in the wake of demographic and later industrial territorial concentration and are currently experiencing a new rise, and powerful structural shifts based on the postindustrial trends and opportunities of globalization. Such an interpretation implies that a part of the colossal urban clusters in a number of developing countries has not yet been able to fully claim the name of global regions.

Global city–regions can be formed on a national or transnational platform; they can have both a mono- (Greater Tokyo) and polycentric (Ruhr) structure. Their specificity consists in the fact that they are a free constellation of cities, which is not anyhow officially regulated—they have neither clear boundaries nor a single governing body.

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SPELL: 1. polycentric