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**No. 93
From spatial research to
regional science
(A draft of Eastern and Central
European science history)**

**by
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Introduction

The 20th century marked an era of specialisation of the sciences and the birth of new scientific disciplines. The investigation of increasingly complex social processes and economic phenomena required the development of new scientific branches. In the background of this evolution was the need for a conscious organisation of society and the economy: the organisation of a country, the operation of an economy, the development of human relations requires substantial knowledge. Various branches of sociology, political science, psychology and economics already played a dominant role in the practice of modern states at a relatively early period.

In the focus of interest of the early classical economists were new space shaping forces that resulted in the transition from a rural society to the industrial age in Western Europe. The mercantilists of the golden age of commercial capitalism highlighted the role of spatial relations in market expansion and the reduction of production costs. Almost every economic current of thought during industrial capitalism integrated space, local, regional, national and international dimensions into its system of thinking. Economics joined the traditional discipline of geography in the investigation of territorial processes, and spatial economics even gained a predominant role in theory building and the formulation of spatial policy. Due largely to the methodological development of the social sciences, the expansion of empirical analysis and the interest of social management, spatial relations of socio-economic phenomena entered the horizon of other social sciences as well (*Benko 1999, Egyed 2012*).

During the second half of the last century a large number of research programmes were launched in Western Europe and the United States to investigate the spatial structure of the economy and society; new theories, instruments and institutions enriched the science and practice of social management. Institutions and departments were organised to facilitate research and training in the area of scientific problems related to space, monographs, book series and journals were published (*Isard 1975*). Just as economists adopted the spatial approach, so did the powerful need for the modernisation of traditional regional geography emerge. Despite the numerous disciplinary results, international scientific public opinion associates the notion and research methodology of the new economic geography with the work of economist Paul Krugman (*Krugman 1991a, b, 2000, 2011*). The theses which contain the counter-opinions of prominent figures of economic geography reject several aspects of the spatial grounding of the tentative of the renewal of economics (*Martin 1999*).

The leading figures of economic geography sometimes commit the natural mistake of neglecting the recent results of other scientific disciplines while being immersed in studying the new development perspectives of their own scientific

discipline. The rapid development of the integrative spatial science, “regional science” occurred simultaneously with the modernisation of traditional disciplines. There are still debates concerning the nature of its “autonomy” as a discipline, nevertheless, social scientists engaged in spatial research have arrived at a consensus concerning its definition. According to this definition regional science provides a unified system of the common basic notions, theories and methods of social scientific disciplines engaged in the study of space, through the utilisation of which they investigate economic phenomena and processes (Boyce 2004, Boyce–Nijkamp–Shefer 2011, Nemes Nagy 1998, Mészáros 2006).

Starting in the 1970s, the advanced industrialised countries have experienced periods of grave crisis: geographical disparities have intensified, and the decline of Fordist type industrial production together with the emergence of new space shaping forces gave rise to countless questions regarding spatial transformation. Massive structural changes have shaped the post-Fordist economy and these have formed the core of research on social and settlement change during the past two decades. The number of regional scientific publications multiplied, half of over a dozen journals currently published were established during the boom phase. The spectrum of research topics became broader, new trends emerged e.g. the investigation of space structuring effects of innovation and technological development and the network economy.

The results of the development of regional science in Western Europe and the USA were summarised in several studies and books (Florax – Plane 2004, Isard 2003, Isserman 1993, 1995). New works were published about the publication forums of regional science and the activities of its international organisations during the past decade. In these works we only find a couple of references to Eastern and Central European spatial research. The modest references can be explained by the fact that the examination of the spatial evolution of the economy and society and the organisation of spatial research into an autonomous discipline were not reflected in Eastern European research programmes. On the other hand, we may recall that neither the results achieved in determining the regularities of national social and economic spaces, nor the attempts at the organisation of science caught the attention of international professional public opinion. It is likely that both suppositions contain an element of truth.

A specific feature of the investigation of Eastern and Central European regional development is that several Western European researchers, such as the British scholars Ian Hamilton (1974, 1982), Michael Bradshaw (1993), Bradshaw – Stenning (2004) and David Turnock (1978, 1989), and French researchers Marie-Claude Maurel (1982, 2002, 2004) and Violette Rey (1996) were specialised in the examination of this area and studied the spatial processes of one or several countries, while in Eastern Europe an extremely narrow circle of researchers perform systematic research on this region, György Enyedi was the only

scientist to perform comparative analyses about this area on a regular basis. Around the turn of the millennium, the scientific activities of Iván Illés, coordinator of the CADSES-programme for the German Federal Office for Construction and Spatial Development were closely related to this area (Illés 2002). Polish researcher Gregorz Gorzelak published a book in 1996 about the Eastern European regional aspects of the transformation (Gorzelak 1996). However, the investigation of the area did not constitute a permanent theme in his scientific portfolio. At the turn of the year 2000, preparations for the EU accession of Eastern European countries were accompanied by several scientific publications; these, however, were collections of studies prepared by researchers of the various countries.

The present study evaluates the regional research capacities of the countries of the former socialist block. It provides a picture of the historical antecedents of spatial research, the specifics of regional tasks to be resolved, the characteristics of the institutionalisation of regional science and its publication forums. As a conclusion, it summarises the presence of various criteria of regional science in the individual countries. The summary and evaluation of results in spatial research and the contribution of 'European added value' of the results may be the topic of a separate study. This future study may choose from a wide spectrum of results of the past two decades. Significant results were achieved in the development of European regional science, e.g. in studying the regional effects of the Eastern and Central European market economic transition, the new democratic public administrative spatial organisation, regionalisation and regional decentralisation, the system of objectives, instruments and institutions of EU-conform regional policy, the competitiveness of urban networks and cross-border cooperation.

Recent publications with a special thematic focus were published about the state of spatial research in some countries, yet no comparative analysis has been performed as yet about the development of the complex institutional system of Eastern and Central European regional science. A summary about the state of social geography was prepared in the framework of a research investigating the state and results of Eastern European social sciences. We find ample references to spatial research in these (Maurel 2002). The evaluation prepared by György Enyedi for the International Geographical Union contains valuable information about the results of Central European applied geography (Enyedi 2003). The methodology of the study is based on literature analysis, the survey of internet data bases and the personal experiences of the author.

1 Regional development and spatial research in the 20th century

There had been hardly any period in the millennium-long history of Europe when Eastern territories followed an ‘outstanding’ development path. The long-term trends of marginalisation were only interrupted by short periods of recovery during the prosperous centuries of the Middle Ages, the Enlightenment, and later on the unfolding of the Industrial Revolution. General European development had a decisive impact on the metropolitan elements of the Eastern and Central European system of settlements, core regions did emerge in the spatial structure, but their expansion was limited, and they did not exert a decisive influence on regional development outside their immediate catchment areas.

1.1 Regional disparities in the “Eastern Europe of empires” before World War I

Geopolitical factors contributed heavily to the aggravation of spatial disparities in the Central and Eastern European macro-region. During the 18th–19th centuries, which saw the spectacular transformation of the spatial structure of the economy and the urban network, nations lived under Russian, Turkish, Prussian or Austrian control (the latter later on integrated into the Austro-Hungarian Monarchy). Their political dependence restricted the possibility of their autonomous development. Spatial development within the macro-region was primarily a function of what type of economic policy the imperial centres practiced. These disparities were the most spectacular in the relative economic performance of neighbouring Polish areas which belonged to Tsarist Russia or Prussia.

The institutionalisation of national movements had an indirect effect on the spatial development of future nation states as well. It was most particularly the countries within the Russian sphere of interest which articulated their objection to the oppressive measures of imperial nationality policy. The Russian state utilised territorial-national strategies in the operation of the public administration of peripheries. The Tsarist General Gubernias were mostly multi-ethnic entities. The regions’ historical, ethnic and geographical factors were also taken into account in the development of various forms of the exertion of the imperial will (*Lieven* 2000).

At the end of the 19th century, 92 percent of the industrial production of Tsarist Russia was provided by its European territories. The concentration of these areas continuously increased. During the last decade of the past century, the most developed industrial areas of the Empire were the Gubernias of Moscow, Warsaw, Vladimir and Saint Petersburg. The number of industrial employees per

thousand persons was between 32–82 in these areas, while in the least developed areas this figure was between 1–7. During the first decade of the 1900s, the industrial production data of macro-regions showed 10-to 12-fold differences. The manufacturing industrial production per capita was 31 RUB in Russia during the first years of the 20th century, its value was 87 RUB in the north-western regions and the Baltic area, in the Central Russian industrial district it was 78 RUB, and in Asian Russia it was only 8 RUB (*Horváth* 2008). The level of the exploitation of the country's natural resources was incredibly low, 90 per cent of the Empire's resources remained unexplored.

The modernisation programmes of Hungary, the construction of railways, water management works and state-financed public works whose main focus was Budapest caused significant transformations in the country's spatial structure at the end of the 19th century. These were predominantly aimed at concentration and contributed to strengthening the national and international positions of the capital city. The governments of the era did not elaborate their spatial development policy in the modern sense, yet a response was required for the unfolding modernisation demands of lagging areas of the country. The actions of peripheral areas whose intensity was varying were supported by the National Hungarian Economic Association (OMGE). The moderation of spatial disparities was a key factor in the philosophy of the operation of the association. The first governmental development programme was launched in the North-Eastern Carpathians at the end of the 1890s, and a governmental inclusion strategy was formulated on the basis of the decrees of the Székely Congress in 1902 for the modernisation of Székely Land, one of the most underdeveloped region in the country. The Székely Congress, which provided an emblematic unified system of development efforts of the area's stakeholders, can be considered a key element in the tradition of Hungarian spatial development (Székely Congress, 2001). Albeit due to the vicissitudes of history, concrete governmental and local actions failed to achieve their ambitious modernisation goals, the congress' protocols provide interesting and thought-provoking literature for current spatial development professionals.

1.2 The integration of regions into nation states between the two World Wars

The first Eastern and Central European governments post-World War I were not only faced with spatial disparities in economic performance, but spatially heterogeneous social, political and public administrative institutional systems as well. These problems were enormous in each new state, since the provinces of the new countries formerly belonged to different empires. The creation of a uniform framework for politics and power absorbed tremendous capital. In the realisation

of a unified state organisation, the moderation of spatial differences did not constitute a priority public task. In several countries, however, tasks related to spatial policy did emerge in the process of the integration of the transportation network, the expansion of energy production and the construction of social-political institutions of the majority state. The highest number of measures were mobilised in the two largest countries, Poland and the Soviet Union, directed at the creation of the economic foundations of regionalisation.

Following the declaration of a unified Poland in 1918, the first tasks included the construction of transport lines between the Upper Silesian coal basin and the Baltic Sea. The railway line starting from the Katowice industrial region had to be extended to the coastline, and new port investments and urban development programmes had to be launched in Gdynia as Gdańsk (Danzig) remained under League of Nations control. These objectives were realised by 1926. The expansion of the economic bases required the development of the industry in a country with 66 per cent agricultural employment in the middle years of the 1930s. Several regions became the focus of attention of political practice. Twelve areas with development difficulties were delimited. One category of these comprised German demarcations and politically vulnerable areas (the so-called “Polish corridor” between Germany and the Free City of Danzig); another comprised overpopulated regions dominated by peasant economies or lacking development intensity due to the dominant presence of mountains (Białystok, Lwów, Kielce region, Southern Poland). Historical industrial regions constituted a separate group (Łódź, Poznań, Upper Silesia). And finally, in order to enable Warsaw to perform its capital city functions, the total infrastructural modernisation of the agrarian region was required (*Hamilton 1982*).

The development difficulties of these problematic areas did not disappear even after World War II, and the resolution of some of them is still to be awaited. Still, the programmes had several positive impacts. First and foremost, the important role of spatial aspects was recognised in national economic planning. This led to systematic data collection, population and economic prognoses were made, the spatial foundations of the post-war planning system were already established during this era (*Malisz 1978*). The 1932 Conference of the Society of Polish Town Planners (TUP – established in 1923) articulated the need for the application of spatial planning for the first time, the Regional Planning Association of Warsaw was established in 1936. The Society published the statistical atlas of Poland which divided the country into two entities. „A” Poland was constituted by developed areas lying west of the Vistula, „B” Poland was comprised of eastern regions. The Association strived to convince the government that the latter regions should be the main beneficiaries of the public investment plan of 1936–1940. The Polish Ministry of Interior Affairs established planning offices in the former special regions. The lagging area in the Krakow–Sandomierz–Lwów

triangle was subordinated to the control of the Ministry of Defence, this territory was designated as the development zone of Polish military industry replacing the area of Upper Silesia in the proximity of Germany.

The development of lagging peripheral areas was elevated to the level of state ideology in the *Soviet Union*, the illusionary programme of eradicating the disparities between villages and towns served the needs of a policy subordinated to the military-defence and power interests of the Empire. The few development attempts of the first decades of the Soviet power caught the attention of international professional public opinion. The concept of the comprehensive electrification of the country, the so-called GOELRO-plan can be regarded as the forerunner of complex spatial economic development strategies. This plan articulated the need for the creation of macro-regions. 21 economic districts were created, whose tasks were the elaboration and organising the implementation of energy and economic development programmes (*Tarhov* 2005). The concept of industrialisation focused on the country's territories lying at the western part of the Ural. Over a half of the industrial investments were located in the proximity of the old industrial areas – the Volga region, the Kuznetsk Basin. The new industrial parks in the proximity of raw material sites serving defence purposes and not territorial development contributed to the eastward shift of industrial potential, resulting in the rapid settlement of several regions of Siberia. The spectacular regional disparities in the country did not disappear, moreover; in the presence of modern space shaping forces, they continued to rise.

During World War II, a considerable spatial restructuring could be observed in the industrial sector. Two-thirds of the outsourced companies settled in the Ural and Volga region and 16 per cent in Western Siberia (*Treivish* 2002). In 1941, a large proportion of the firms in Moscow were evacuated to areas lying east of the city and to Siberia. Consequently, the production of European industrial regions was reduced by half. The weight of Siberia was even less significant according to value data, yet a drastic increase in its position could be observed based on the number of employees. Post-World War II, a rapid development of the Western territories was experienced. In Eastern areas petroleum, gas and other raw material industry developments were launched from the end of the 1940s, which were based on the geological research and natural resource extraction of the 1930s. The positions of Eastern regions (Kazakhstan, Siberia and the Far East) in raw material production were considerably strengthened during this period.

The scientific groundwork for the elaboration of regional programmes of national economic plans was laid by the Committee for the Research of Natural Forces of Production of the Academy of Sciences (Komissiya po izucheniyu estestvennyh proizvodetel'nyh sil [KEPS]) during the 1920s. The organisation was established by the Imperial Russian Academy in 1915. The institute was responsible for the regional sub-programmes of the GOELRO plan. The organisa-

tion was transformed in 1930, it became subordinated to the State Committee for Planning under the name of the „Council of the Research of Production Forces” (Soviet po izucheniyu proizvoditel’nih sil [SOPS]) (*Adamesku* 2012).

The regional consequences of the organisation of various parts of the countries into a unified state could be evaluated in other new states of Eastern and Central Europe. The strategic objective of Hungarian economic policy was to establish the internal cohesion of a country reduced to 1/3 of its previous size and the adjustment of industrial capacities to the new markets. Spatial disparities were significant in the new Romania. The level of urbanisation in Transylvania (the density of the urban network) and its level of industrialisation was considerably higher than in the regions of the Romanian Old Kingdom. Transylvania contained 30% of the population of the new Romania, while it had a 40–50 per cent share in the industrial capacities of the country. In the Czech Republic, it was the creation of new Slovakian markets for the Czech industry and the harmonisation of the transport infrastructure which determined the integration of Upper Hungary into the new national economic space. The formal power and public administrative structure required for establishing political cohesion had direct and indirect impacts on the development of the settlement network and the evolution of the economic potential of the various urban areas.

As a result of the state organisational and socio-political tasks related to the territorial shifts that took place during the short period between the two world wars, several scientific disciplines had to place a growing emphasis on the analysis of territorial economic processes, the organisational system of territorial public administration and governance models, the settlement system and population redistribution. During this era, the activities of several acknowledged social scientists left their mark on the functioning of the state. To cite a few examples, we can mention the rural sociological works of the Romanian Dimitrie Gusti, the political scientific research of the Hungarian András Rónay, the economic and socio-geographical analyses of the Czech Viktor Dvorský. The research results of significant figures of the generally prominent Russian (later Soviet) applied economic geography, Ivan G. Aleksandrov, Nikolay N. Baransky, Nikolay N. Kolosovsky contributed to the creation of economic districts and provided the scientific groundwork for spatial planning.

During World War II, new institutions were established in several parts of Central Europe which regarded the identification of regional assets to be their main task in order to provide a scientific basis for post-war reconstruction. Among these, the Baltic Institute in Toruń, the Silesian Institute in Wrocław, the Western Institute in Poznań, the Silesian Institute in Opava, Moravia and the Transdanubian Research Institute in Hungary are worth mentioning. Two of these institutes are still functioning at present. Currently the main profile of the Institute of Poznań is the research of Polish-German relations. The institute founded in

Pécs in 1943 became the centre of basic research in Hungarian spatial development, and maintained its functioning as the seat of the Centre for Regional Studies of the HAS from 1984.

1.3 The spatial policy of state socialism

Socialist planned economies desired to achieve the moderation of spatial disparities primarily through industrial development programmes. Infrastructural investments linked to industrialisation and the ever-growing speed of urbanisation resulted in the reduction of income disparities of macro-regions.

Spatial planning fulfilled an important role in the system of the planned economy: in Poland, an act on spatial planning was adopted in 1961. Long-term spatial plans contained the key elements of regional development strategies, settlement network development concepts were elaborated in several countries (Bulgaria, Hungary, and Romania).

The ideology of the regional and settlement policy of state socialism (classical Marxist theory, urbanist utopias, planning theory) and the objectives derived thereof (balanced development, the moderation of disparities in the comfort level of villages and cities, the spatially balanced distribution of free or highly subsidised social transfers) posed serious barriers to scientific disciplines engaged in the study of spatial processes. The notion of an ideally homogeneous society conquered scientific thought in the various countries in a differentiated way. Due to their intensive links with Western science, Polish and Hungarian social science provided significant research results about spatially unequal development, the anomalies of the transformation of the settlement structure, and at a relatively early period, the middle years of the 1960s, they expressis verbis questioned the efficiency of the centrally planned economy, an economic policy neglecting local-regional assets (*Domański* 1973, *Dziewoński* 1967, *Enyedi* 1981).

The results of the analyses about the spatial transformation of the planned economies pointed to the fact that the economic structure and type of urbanisation characteristics in Eastern and Central Europe did not represent an autonomous model, but a repeat of Western type urbanisation and development cycles with a significant delay. The disparities of spatial development could be attributed to late industrialisation, on one hand, and the functioning of the system of state socialism on the other hand.

Due to the specific development paths of Eastern and Central Europe, research in the field of social and economic space shows quite a few unique features as well. Socialist science policy, following the guiding principles of the power structure, did not consider spatial research as a priority issue. This was mainly because not one tier of the strictly centralised state administration was interested

in the analysis of local-regional specifics. Political practice aimed at homogenisation and considered spatial aspects only to the extent that central planning required.

Even though the era between 1948 and 1990 was characterised by challenges related to the research of socio-economic space for different scientific disciplines, the demands of the commissioners were neither complex nor demanding of thematic cooperation between scientific disciplines from the aspect of social management. The traditional scientific disciplines investigating spatial relations (economic geography, settlement and public administration sciences, to a certain degree economics) could all pursue their activities independently of each other in academies or universities. The scientific bases of spatial development research were established primarily in public institutions, national planning offices and urban planning institutes.

The catalytic effect of the investigation of spatial processes can also be detected in the process of the differentiation of Eastern European social sciences. The research results related at the detection of inter-settlement disparities in the structure of society served as an important raising force behind the greater autonomy of sociology in terms of theory and methodology, whilst the investigations of spatial-settlement components of public administrative-power relations contributed to the legitimisation of political science (*Bihari* 1983, *Kulcsár* 1986, *Musil* 1977).

The institutional coordination of territorial research was achieved in two countries. The Council for the Investigation of Forces of Production maintained its functioning in the Soviet Union. In Poland, the Polish Academy of Sciences established the Committee of Space Economy and Regional Planning in 1958 (*Kukliński*, 1966). These two institutions disposed of autonomous financial resources facilitating the validation of their general coordination competences. In the third country, Hungary, the governmental decree on the national spatial development concept delegated the organisation of basic research in spatial development to the Hungarian Academy of Sciences in 1971; however, this did not imply state-level coordination.

The major scientific branch involved in the examination of spatial processes was social and economic geography. Almost every scientific academy had their own geographic institutions whose results in applied geographical research had a significant impact on spatial development decisions of the era. Poland was also prominent in the area of institutional innovations; the name of the geographical institute of PAS was changed to Institute of Geography and Spatial Economics at the beginning of the 1970s. In Hungary, the Centre for Regional Studies functioning in the form of a network was established in 1984, whose base was the Transdanubian Research Institute of the HAS performing territorial basic research. The research centre, in collaboration with the Faculty of Economics of

the University of Pécs, launched a post-graduate training programme in spatial development in 1988. The scientific capacities of the geographic departments and institutes of the university were quite significant despite the fact that this discipline was rather more oriented towards teacher training in socialist higher education. Departments of urbanism in polytechnic universities were also acknowledged research groups in several countries.

A significant factor in the long-term development of Polish and Hungarian spatial research was the reformist spirit in the political systems of the two countries. Consequently, the relations between scientific workshops of the two countries were maintained with Western European research units, joint research programmes were launched, the national, regional and local political elite expressed interest in their research results. In fact, it is not too bold to state that regional research played an active role in preparing the regime change (*Maurel* 2002). Research results called attention to the fact that the modernisation of the economy required a substantial transformation of the spatial structure and, as a result, the reconceptualisation of objectives, principles and institutions of spatial development policy was inevitable. The cooperation and development coalition between the central state, local-territorial communities, public and private sectors was to become the basis of the new model of social management. Hungarian research analysing the spatial structural transformation of planned economies highlighted the fact that Eastern European economic structure and urbanisation did not constitute an independent model, but a copying of Western type urbanisation and development cycles with a significant delay. The disparities of spatial development were attributed to the lateness of development on one hand and the functioning of the system of state socialism on the other (*Enyedi* 1989).

1.4 Regional transformation after systemic change

New processes could be observed in Eastern and Central European spatial development in the 1990s. Their impacts were as dramatic as the changes linked to forced industrialisation. Demographic, labour market, economic and environmental processes showed significant disparities in Eastern and Central Europe during the transition period to the market economy. Western European experts tend to treat this territory as a homogeneous entity. However, the heritage of state socialism, the regional effects of transformation and the economic policy instruments and institutional solutions utilised in the management of post-socialist change have produced quite heterogeneous results. The radical transformation of the economic structure has not affected the various regions in the same way. The losers of transformation (similarly to other European countries) were heavy and extractive industrial regions, but, as an Eastern European specificity, also encom-

passed cohesive agricultural areas. The building of the market economy resulted in an aggravation of regional disparities. The presence of disparities is also manifest in that there are outstandingly developed regions in each country (except Bulgaria). The ten most prosperous Eastern and Central European regions are located in four countries: six in the Czech Republic, two in Hungary, one each in Slovakia and Romania. All but one of the ten poorest regions can be found in two countries which acquired EU membership later, Bulgaria and Romania (*Horváth* 2004) – being joined by Northern Hungary by 2011. The most spectacular example of the dominance of pure market-driven processes is Russia. We shall illustrate regional problems with two specific data: first, there is a 44-fold difference between the region with the lowest and the highest income; second, the share of Moscow in the national GDP rose from 10.3 per cent in 1994 to 23.8 by 2007. In the meantime, the weight of Saint Petersburg increased from 3.3 per cent only to 3.9 per cent (*Dergachev – Vardomsky* 2010).

One of the characteristic deficiencies of the activities of the first democratic governments in Eastern and Central Europe following regime change was the lack of attention given to the spectacular and rapid spatial restructuring of the economy. Hungary was the only exception, where, following the democratic elections of 1990, a Ministry of Environmental Protection and Spatial Development was established in the governmental structure and governmental programmes were elaborated for the restructuring of heavy industrial regions experiencing acute crisis situations. None of the governments elaborated a coherent regional policy strategy covering the entire area of the country, nor were former spatial development programmes adjusted to the new development objectives – rather, they were eradicated. The political elite did not comprehend the essence of spatial development; there were quite a few who identified it with the dated instrument of the planned economy and regarded it as a remnant of national economic planning. This political atmosphere was not favourable for the thematic and institutional modernisation of spatial research in the 1990s.

Regional policy encountered countless problems in the new EU member states. The operation of institutions established on the basis of the laws on spatial development was characterised by instability. The central institution of regional policy changes with each new governmental cycle. In Hungary, the coordination of spatial development has been delegated to eight different authorities already. Numerous challenges are encountered during the enforcement of the basic principles of the Structural Policy of the European Union: there is no institutional system to permit the efficient functioning of decentralised decision-making mechanisms, the enforcement of aspects of additionality encounter serious obstacles due to the delay of the state budget's reform, the low efficiency of programme financing is due to the weak cooperation propensity of stakeholders of spatial development, and we could endlessly list the problems of spatial develop-

ment which defy our expectations. The direct consequence of all this is a continuous increase of spatial disparities in each of the countries; what differs is merely their degree.

EU membership, institutional changes and expanding financial opportunities have created favourable conditions from the aspect of spatial research as well. New knowledge about the practice of Western European spatial development policy, the economic and human resources potential of regions mentioned in national development plans was required for the application of the Structural Policy of the European Union and the elaboration of regional development programmes and concepts. The new requirements generate scientific demand, regional development aspects have also been present in the training of professionals in several countries. In the largest successor state of the former USSR, the Federation of Russia, regional scientific knowledge gained importance due to the reorganisation of interregional relations and the widening competences of regional authorities.

2 Spatial research at the beginning of the 21st century

2.1 Institutional frameworks

The demand for a better comprehension of spatial processes significantly increased after the change of regime. The institutional structure of spatial research has also undergone major transformations. Academic research institutions have found themselves in a difficult financial situation in several countries. The Czech Institute of Geography was closed; a research centre of earth sciences was established in Bulgaria where the role of social geography is quite peripheral. There have been institutional integrations in Hungary as well; the Centre for Regional Studies has been deprived of its managing functions, its national network has become weaker. The new research centre's seat is in Budapest, the positive experiences in the decentralised management of science have assumedly gone to waste. Large public urban planning institutes with remarkable intellectual capacities which had played a significant role in the elaboration and execution of spatial and settlement development tasks of the socialist era were closed down.

On the other hand, the weight of regional scientific capacities of universities has increased. Research has once more become a priority task of universities; the structure of training has also been transformed. In geography training, applied geography masters' programmes have been launched which also specialise in the training of spatial and settlement development experts. A significant result of the

comprehensive reform of the economics curriculum was the organisation of a master's programme in spatial economics and regional policy.

According to calculations based on internet data collection in the research institutes and university workshops of the six countries of Eastern and Central Europe, the number of employees engaged in spatial research exceeds 900. The distribution of student numbers is quite uneven within and also between the respective countries (*Table 1, Figure 1*).

Among the countries investigated in depth, Poland has the largest capacity in regional scientific research and training. Poznań, Łódź, Warsaw, Krakow and Wrocław are the country's most significant centres of regional scientific research. Hungary ranks second (the most important workshop centres being Pécs and Budapest), with its spatial distribution of research units in nine cities and town, which is more even than in Romania, where regional scientific workshops can be found in four cities. In the Czech Republic, only the three largest cities can be regarded as centres of regional scientific research. Slovakia is tri-polar from the aspect of regional science, and in Bulgaria only the academic and university geographical institutes of the capital city are engaged in regional scientific research. Approximately 60 scientific workshops with regional research as their main profile have been organised in 30 cities of Eastern Europe since the beginning of the 2000s. These workshops have multiannual research programmes, they publish their results on a regular basis, their colleagues frequently attend international scientific forums, publish their works and participate in conferences.

Table 1

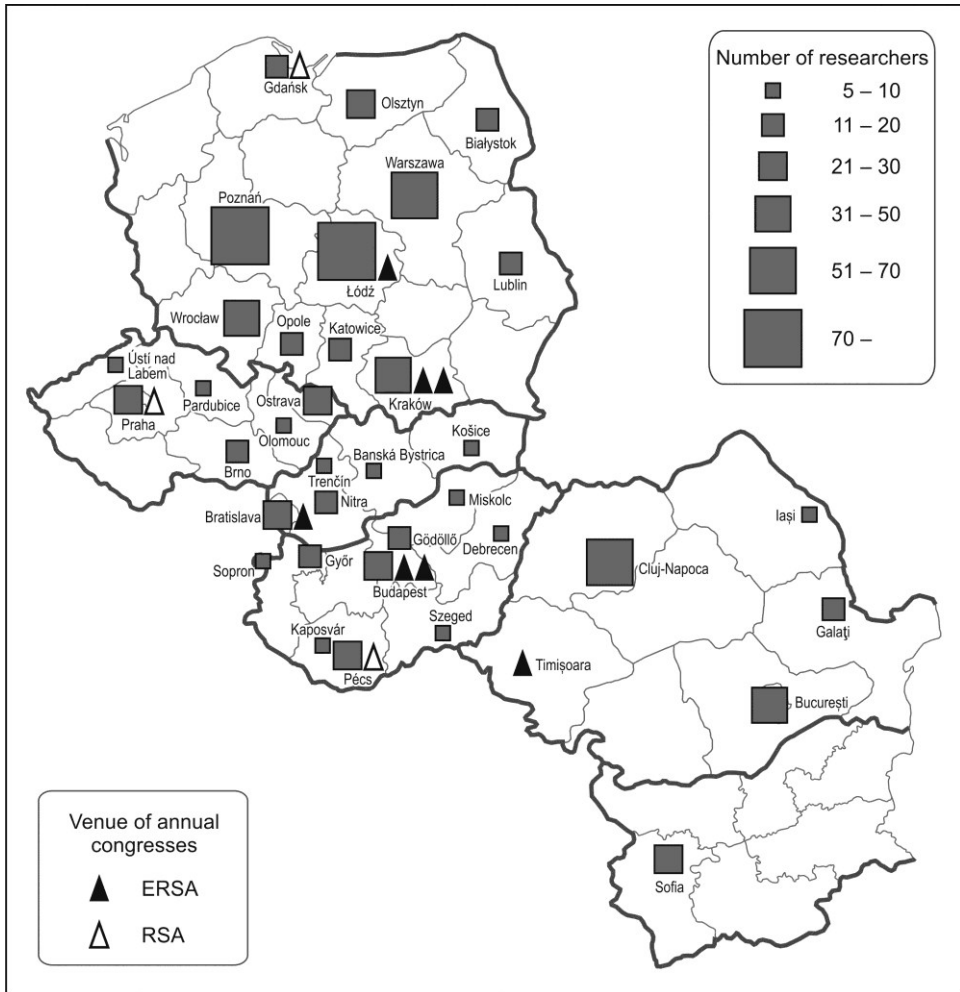
The number of regional science researchers in Eastern and Central European countries, 2012

	The number of scientific researchers, person	Distribution, %	The rate of researchers employed in research units in capital cities, %
Bulgaria	30	3.3	100.0
Czech Republic	115	12.6	34.8
Poland	425	46.7	17.5
Hungary	150	16.5	20.0
Romania	130	14.3	31.9
Slovakia	60	6.6	50.0
Total	910	100.0	21.4

Source: Author's estimations based on internet data collection. Contains university and research institute workshops whose name, research programmes and publications contain reference to regional science topics.

Figure 1

Spatial research workshops in Eastern and Central Europe, 2012



Source: Author's construction based on internet data sources.

In the following, the author cannot refrain from evoking some features of the institutional background of Russian regional science. The analysis of this country is not possible in the framework of the present study, since the collection and processing of the massive volume of information would require a longer time. The leading institutions with a century-long tradition of Russian regional scientific research are still functioning, as has been demonstrated, „regional'naya nauka” is an acknowledged scientific discipline in Russia. The discipline has two dominant intellectual centres: Moscow and Novosibirsk. Regional topics can be found in the research plans of dozens of the academic and federal sectoral research institutions. Two institutions deserve special attention. Several colleagues of the Institute of Geography of the Russian Academy of Sciences Russia regularly publish high quality works at Western scientific publishers (*Artobolevsky* 1997, *Ioffe – Nefedova* 2000, *Lappo – Hönsch* 2000). The other significant workshop is the Council of the Research of Production Forces already mentioned, which exerts its coordinating functions through its several research programmes and the publication of books and journals. The scientific centre of Novosibirsk is the Institute of Economics and Industrial Production Organisation of the Siberian Division of the Russian Academy. One of the reform institutions of Soviet Perestroika can boast of three scientific schools in regional science. One is responsible for laying the scientific groundwork for the spatial development strategy of Siberia and the further development of spatial planning, the other is the leading workshop of Russian settlement sociology, the third is a scientific community that functions on the basis of the most advanced Russian traditions of mathematical-statistical analysis methods and modelling. The two institutions in Moscow and the one in Novosibirsk constitute the scientific basis of the federal research programme titled “The interdisciplinary synthesis of the spatial development of the Federation of Russia” coordinated by the Russian Academy (*Kuleshov – Seliverstov et al.* 2012, *Kotlyakov – Glezer et al.* 2012).

Apart from research institutions, scientific associations constitute the other important base of spatial research. Besides researchers engaged in the field, a scientific association assembles practicing professionals interested in the application of scientific results and intellectuals interested in regional development. These forums for intellectuals function as autonomous institutions or national divisions of international regional science associations. The first group contains the Hungarian and Romanian Regional Science Associations. The Romanian Regional Science Association was founded in 2000. It currently has 140 members. The results of Romanian spatial research are presented during its annual thematic conferences. It publishes a journal with two issues annually, titled the “Romanian Journal of Regional Science”. The Hungarian Regional Science Association was established in 2002, it currently has 430 members. Its annual general assemblies are joined by thematic conferences. The organisations of regional scientific re-

searchers in the rest of the countries are the national divisions of either the European Regional Science Association or the Regional Studies Association. In Poland, the Committee for Spatial Economy of the Polish Academy of Sciences (Komitet Przestrzennego Zagospodarowania Kraju PAN) can be regarded as the integration centre of regional scientific research. The committee operating six working groups publishes three publication series annually. The 115 members of the Regional Scientific Committee of the Hungarian Academy of Sciences are employed in five working committees.

2.2 Publication forums

As was the case more globally, the publication of spatial research results in Eastern Europe was only possible in the scientific journals of other disciplines during the first half of the 20th century. Journals in geography, economics, sociology, public administration published the results of spatial research. Regional science did not have its own publication forums in any of these countries until the middle years of the 1980s apart from the publication series of the Polish Academic Committee, the public administration journal of the Academic Institution of Economics of Novosibirsk or the Hungarian Spatial Statistics. Before regime change, the publication of the Hungarian *Tér és Társadalom* in 1987 was considered a scientific novelty, and was followed with interest among international professional circles as well.

The first decade of the 2000s was the main period of the foundation of journals and over two dozen series were established by institutions, publishers and institutional consortiums engaged in regional research. The data concerning the major journals of regional science in Eastern and Central Europe are summarised in *Table 2*.

The level of institutionalisation, the traditions and scientific capacities of regional research have a decisive impact on publication activity. The Polish and Hungarian publication forums reveal a complex picture. The number of regional scientific monographs is the highest in these two countries. In the framework of the series titled “Spatial and Settlement Research” (*Területi és Települési Kutatások*) under the care of the Hungarian Academic Press and later on under the care of a different publisher with the subtitle “*Studia Regionum*”, over 40 scientific monographs had been published summarising the results of Hungarian regional scientists until the end of the last decade. From now on, it is the „Modern regional science” series under the care of the *Akadémiai Kiadó* which will promote the results of Hungarian researchers. High quality Polish publishers which operate in regional centres publish a large number of regional scientific works as well.

Table 2

Some characteristics of the major regional scientific journals

Name of journal	Year of foundation	Publisher	Annual frequency of publication	Language
<i>Czech Republic</i>				
Regionální Studia	2007	Faculty of Economics of the University of Prague	4	English
<i>Poland</i>				
Biuletyn KPZK PAN	1958	KPZK PAN	Occasional. 4–5 volumes a year. 250 published volumes.	Polish
Studia KPZK PAN	1958	KPZK PAN	Occasional, 2 volumes. 115 published volumes	Polish
Studia Regionalia	1986	KPZK PAN	Occasional, 1–2 volumes. 32 published volumes.	English
European Spatial Research and Policy	1994	University of Lodz, University of Groningen, Comenius University, Tbilisi State University, The Federal Office for Building and Regional Planning (Germany)	2	English
Studia Regionalne i Lokalne	2000	University of Warsaw Centre for Regional and Local Studies	4	Polish
<i>Hungary</i>				
Területi Statisztika	1960	Central Statistical Office	6	Hungarian
Tér és Társadalom	1987	HAS Centre for Regional Studies	4	Hungarian
Falu, Város, Régió	1999	HungarianNonprofit Ltd. for Regional Development and Town Planning	3	Hungarian
Discussion Papers	1986	HAS Centre for Regional Studies	Occasional, 4–5 volumes. 105 published volumes.	English

Cont. Table 2

Name of journal	Year of foundation	Publisher	Annual frequency of publication	Language
<i>Russia</i>				
Region: Ekonomika i sociologiya	1963	Russian Academy of Sciences, Siberian Branch, Institute of Economics and Industrial Production Organisation	4	Russian
Prostranstvennaya ekonomika	2004	Russian Academy of Sciences Far-East Branch, Institute of Economics	4	Russian
Region: sistemy, ekonomika, upravlenie	2007	Nauchnaya Zhizn'	4	Russian
Ekonomika regiona	2011	RAS Ural Branch, Institute of Economics	4	Russian
Sovremennye proizvoditel'nye sily	2012	Council for the Research of Production Forces	4	Russian
Regional Science of Russia	2010	Pleiades Publishing, Springer Verlag distribution	2	English
<i>Romania</i>				
Romanian Journal of Regional Science, On-line	2007	Romanian Regional Science Association	2	English
Romanian Review of Regional Studies	2007	Babeş–Bolyai University Centre for Regional Geography	2	English
Journal of Urban and Regional Analysis	2011	Interdisciplinary Centre for Advanced Research on Territorial Dynamics, University of Bucharest	4	English

Source: Data collected by the Author based on internet resources.

3 Conclusions

The positive and negative effects of processes shaping socio-economic spaces can be observed in the 20th century development of Eastern and Central Europe, just as in other parts of the continent. Spatial aspects were also represented in the policies of past eras characterised by heterogeneous forms of state organisation. Research results were useful for decision makers in terms of their ramifications for specific regions. The research results of various social scientific disciplines

were incorporated in spatially-related decision-making processes during the last years of the 20th century as well. Nevertheless, the ruling elite of the communist era required only superficial knowledge about the evolution of spatial processes. Spatial research was conducted within national borders, international professional cooperation – with the exception of Poland and Hungary – remained weak and occasional.

Profound regional transformation was experienced due to the introduction of the market economy after 1989 and the collapse of the Soviet Union. The manageability of these changes naturally called for the thematic and organisational development of spatial research. The preparations for EU accession provided a further impulse for the research and regional studies research groups flourished in all Central and Eastern European countries at the beginning of the 21st century. Disparities can be detected regarding the volume, the institutional system and the spatial distribution of research. The ample availability of factors which contribute to the identity of regional science as an autonomous discipline can be demonstrated in the two EU member countries, Poland and Hungary, and in Russia as well (*Table 3*). Disciplinary criteria are partly lacking or show a weak level of development in the remaining countries.

Table 3

The development level of the disciplinary criteria of regional science

	Bul- garia	Czech Republic	Poland	Hun- gary	Russia	Roma- nia	Slova- kia
Research units		■ ■	■ ■	■ ■	■ ■	■	■
University master trainings		■ ■	■ ■	■ ■	■	■	■
Doctoral Schools			■ ■	■ ■	■ ■		
Journals		■	■ ■	■ ■	■ ■	■ ■	
Book series			■ ■	■ ■	■ ■	■	
Scientific association and scientific academic coor- dinating organisation			■ ■	■ ■	■ ■	■	
International regional scientific congress		■	■ ■	■ ■	■	■	■

Key: ■ = Weakly developed; ■ ■ = Developed.

Source: Author's construction.

The spatial distribution of regional scientific research units is somewhat more decentralised than in the case of other scientific disciplines. The research and development capacities of Eastern and Central European countries show a high degree of concentration in the capital cities; and this may be regarded as an unfa-

avourable phenomenon from the aspect of scientific and regional development (Horváth 2009). In Poland, Hungary and Romania, the weight of capital cities in terms of the number of employees in regional science is one-half to one-third compared to other scientific disciplines. Regional science is a symbol and role model of the decentralisation of social activities. This discipline has accumulated valuable experiences in the operation of its decentralised and network based organisational system, its methods may be efficiently transmitted to other economic and social sectors as well.

The examination of the development history of regional research demonstrates that outstanding scientists play a decisive role in the upswing of the scientific discipline and the broad utilisation of research innovations. In Poland, Antoni Kukliński (1927–), professor of the University of Warsaw contributed to the foundation of several organs and institutions of regional science. During the past two decades in Russia it was Aleksandr Granberg (1936–1910) – former director of the Novosibirsk Institute of Economics and Organization of Industrial Production of the Russian Academy of Sciences and president of the Council of the Research of Productive Forces of RAS – who contributed with his work to the development of Russian regional science. In Hungary, the scholar György Enyedi (1930–2012) was the founder of this scientific discipline. All three of them made significant efforts towards the integration of Eastern and Central European research results into the international system of regional science.

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