

# DYNAMICS OF CROSS-BORDER SPATIAL DEVELOPMENT: A CASE STUDY OF THE MARIBOR (SI) – GRAZ (A) DEVELOPMENT AXIS

DINAMIKA ČEZMEJNEGA PROSTORSKEGA RAZVOJA:  
ŠTUDIJA PRIMERA RAZVOJNE OSI MARIBOR (SI)–GRADEK (A)

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## ABSTRACT

*The opening of internal borders among the European Union member states has not only evoked complex socio-economic processes, but also produced new spatial development potentials. This is especially important for the areas located close to the national borders that were until recently regarded as underdeveloped and peripheral. Conversely, the European Union sees them in a completely different light, as key elements in the process of integration, economic, and social cohesion. Consequently, the processes of cooperation and networking have been triggered on different levels, whereby the deterritorialisation of the new economic, social, cultural and spatial relations occurs.*

*The article describes the issue of spatial development of cross-border areas, which are setting up new development conditions by opening the borders. This topic is presented by the case study of spatial development of the area stretching along the axis between two regional centres, Maribor (Slovenia) and Graz (Austria), in the past subjected to numerous demographical, economical and geopolitical changes. In this regard, two viewpoints of spatial development of the area are exposed: the first one explores the influence of the national border on the development of the research area, while the second one reflects contemporary trends of dispersed urbanization along the infrastructural corridor extending between both regional centres, the most indicative among them being the emergence of new urban nodes.*

## POVZETEK

*Proces odpiranja notranjih meja med članicami Evropske unije ni povzročil le vrste kompleksnih družbeno-ekonomskih sprememb, temveč je sprožil številne nove prostorske izzive, zlasti na območjih, ki ležijo v zaledju državnih meja in so do nedavnega veljala za manj razvita in prikrajšana. Evropska unija pa prav ta območja prepoznava kot ključne elemente za spodbujanje procesov integracije ter ekonomske in socialne kohezije. V čezmejnem prostoru se tako na različnih ravneh sprožajo procesi mreženja in povezovanja, v katerih se manifestira deterritorializacija novih gospodarskih, socialnih, kulturnih in prostorskih razmerij.*

*V prispevku je obravnavana problematika čezmejnega prostorskega razvoja, ki ob odpiranju nacionalnih meja vzpostavlja drugačne razmere za razvoj v prostoru. Tematika je podrobneje predstavljena v okviru prostorske raziskave območja razvojne osi med mestoma Maribor (Slovenija) in Gradec (Avstrija), ki je bilo v preteklosti podvrženo številnim geopolitičnim, ekonomskim in demografskim spremembam. V tem pogledu sta izpostavljena dva vidika prostorskega razvoja; prvi raziskuje vpliv državne meje na razvoj obravnavanega prostora, drugi pa obravnava sodobne trende razpršene poselitve vzdolž infrastrukturnega koridorja med obema regionalnima središčema, med katerimi izstopa pojav novih urbanih jeder. Dinamika razvojne osi je prikazana na podlagi zgodovinskega pregleda razvoja od druge polovice 19. stoletja naprej do obdobja pred padcem notranjih meja EU in sedanjega stanja; v njej se odražajo sodobne težnje nastanka novih urbanih vzorcev v značilni povezavi z infrastrukturnim razvojem.*

## KEY WORDS

*spatial development, cross-border region, development axis, new urban nodes, Maribor, Graz*

## KLJUČNE BESEDE

*prostorski razvoj, čezmejni prostor, razvojna os, nova urbana jedra, Maribor, Gradec*

## 1. INTRODUCTION

The opening of international borders among the European Union member states (hereinafter: the EU), in particular the 2004 enlargement, evoked not only complex socio-economic processes, but also new spatial development potentials. This historic shift is of particular importance for the areas that are located in the proximity of the national borders and were most influenced by them during the past century. The impact of borders on the development of these areas was predominantly negative, resulting in general underdevelopment, social exclusion, and cultural uncertainty. Consequently, the border areas were pushed aside, neglected, even marginalized, and excluded to a high degree from the economic, cultural, as well as social activities of the state and the region. According to van Houtum (1998), these areas were regarded as peripheral in more than one way; firstly, for their geographical position, based on the system, which considered the state as a fundamental functional unit and directed the development inwards (called state-centric system); secondly, they were considered culturally 'peripheral' by the inhabitants of the home country and by the inhabitants of the neighbouring country. Finally, the specific centre-periphery relationship caused unbalanced division of wealth, which reflected in the structurally weaker development of border areas manifested by typical phenomena such as the diminishing number of inhabitants, low settlement density, insufficient infrastructure development, lack of central functions, low accessibility of services, etc. (Vršaj, 2004). Although the border regions on either side of the border faced the same or similar problems, they could not associate because the border hampered any interaction between them.

However, the economic globalization and the integration processes within the EU that allow free movement of persons and capital, goods and services, set new conditions for the development of border regions. They suddenly found themselves in a new role of active links in the process of integration, economic, and social cohesion (EC, 2002). Some popularly coined slogans, e.g. 'the cement of Europe under construction' (MOT, 2000), 'espace vecu' - awakened space (MOT, 2000), 'laboratories of micro-integration' (van Houtum, Strüver, 2002), etc., describe this new borderless relationship that is generally referred to as 'cross-border cooperation' and the region in which it is established as a 'cross-border region' (Caves, 2005). The opening of the borders is thus diminishing the role of individual states and setting conditions for fundamental changes in the organization of space, in which initiatives are taken over by diverse interregional integrations on the basis of economic and cultural relationships, institutions and actors (Sitar, 2005). According to MOT<sup>1</sup> (2000), their development depends on the political will enforced in joint projects, while direct and indirect consequences of cross-border dynamics are reflected in the spatial policies implemented in the territory of border regions.

<sup>1</sup>MOT: *Mission Operationelle Transfrontaliere* is a French state initiative that assists in the execution of cross-border projects along the French border.

Although there has recently been a remarkable upsurge of activity and interest in the areas along the state borders, in border regions and in cross-border processes, they mostly remain within disciplinary fields, i.e. economics, geography, sociology, etc. (Wichmann Matthiessen, 2004). There is, unfortunately, much less interest in cross-border areas from the explicitly spatial point of view. There are several reasons for such conditions: i) economy is the most important factor and the driving force of cross-border integration and should contribute to reducing regional disparities (EPRP, 2000); ii) for a long time the cross-border regions were parts of the group of marginal, prevalently underdeveloped areas that have only recently been involved in transformation process, predominantly due to their integration within the EU, and have been since recognized as areas with important spatial development potential; iii) individual states (within the EU) preserve their own jurisdiction within their own territory and consequently the competences, which despite open borders reach only to the national borders; iv) in connection with the above, spatial research studies encounter numerous formal problems such as disparities in cartography, since maps are generally related to the national territories, while hardly comparable statistical data are related to different administrative classification, etc.; v) cross-border areas reflect complex confrontation of different interests in addition to different legal systems, planning instruments and spatial characteristics (e.g. tradition, culture, etc.). Additionally, countries in the eastern and southern part of Europe, especially those bordering the former Iron Curtain, have a common history of half a century of constrained growth in planned economies and limited opportunities for international cultural exchange, trade and travel. This common heritage is the main reason for the large gap in economic development between the old and the new member states (ESPON 1.1.3, 2006).

The article focuses on the case study of spatial development of the area extending along the infrastructural corridor between two cities: Maribor, the centre of north-eastern Slovenia, and Graz, the centre of the Austrian province of Styria. The case study examines the dynamics of spatial development of this area from two viewpoints: the first one studies the influence of the national border upon the spatial development of the researched area, and the second one reflects the contemporary trends of dispersed settlement along the infrastructural corridor extending between the two regional centres, with the emergence of new urban nodes as the most distinctive trend. The main purpose of the research was to highlight the structural transformation of the cross-border area, which reflects the general intensified involvement in the broader regional and transnational frames. On this basis we defined our thesis that the opening of borders in accordance with cotemporary spatial trends triggers the intensification of cross-border spatial development, marked by the emergence of new nodes.

## 2. RESEARCH APPROACH

Because of the specifics of cross-border areas, our research approach was initially based on the statement of van Houtum (1998) that the border as a physical barrier caused centripetally oriented spatial development – i.e. development oriented inward the bounded territory of the state (Figure 1). The statement was confronted with the assumption of the EU (EC, 2002) that the opening of the borders should cause the opposite effect, i.e. centrifugal development or intensified cross-

border development between urban centres, which also corresponds with the thesis. Subsequently, our research was supported by the analysis of contemporary spatial trends in cross-border regions, which are according to Meijers and Romein (2002) based on the identification of new urban nodes along the development axis as an indicator for measuring the intensification of the inter-urban relations. The emergence of the new urban nodes along the corridors has been described as particularly characteristic for regions with growing interdependences – cities within such a region tend to coalesce morphologically and functionally into larger and dispersed regional urban system where a number of central cities are located in close proximity. The continuing emergence of new ‘nodes’ and motorway-bound types of development with particular specialization, as well as the enlarging scope and thickness of interdependences between old and new nodes, are the major tendencies of such development (Meijers, Romein, 2002).

Within the analytical chapter, for a better understanding the theoretical bases are supplemented by a short historical overview of the development of the research area from the second half of the 19th century until today. As a basis for detailed analysis of new urban nodes located along the infrastructural corridor, we used the method of observation of space, called ‘space reading’, which has been accepted by numerous authors in the contemporary scientific literature such as Sieverts et al (2005), Campi et al (2000), Koch et al (2004), as well as Baccini et al (2003), after whom we also summarised the manner of cartographic presentation. The analysis of contemporary urban structures includes all the newly built structures along the Graz-Maribor axis that: i) are located outside compact urban areas and set in the non-urban environment; ii) present the contrast in both content and form; iii) are located in immediate proximity of a traffic corridor; and iv) possess development potential in the sense of available surfaces for expansion. In order to be more transparent, the most interesting examples of new urban structures are presented in Table 1, which contains indicators for recognizing the character, the purpose, the role and the development potential of the new nodes with regard to specific indicators: i) location, ii) time of construction, iii) use, iv) surface of land and v) factor of influence.

While preparing cartographic presentations we found a general lack of suitable methods and tools to overcome the incompatibility due to the disparities in cartography characteristics of cross-border areas. Therefore, the development of the researched area is presented in a series of maps, schematically indicating the spatial transformation in four characteristic periods.

### 3. OVERVIEW OF CHARACTERISTIC INFLUENCES OF NATIONAL BORDERS ON SPATIAL DEVELOPMENT

In scientific literature one can find different theories about the influence of national borders on the development of border areas. The first aspect describes cross-border regions as characterized in particular by their ambivalence, which is mainly derived from different backgrounds connected to the attached border regions and presented by the asymmetrical confrontation of different social, political, economic, and cultural systems on both sides of the border. Such asymmetries used to influence the daily life of the border region’s inhabitants as they created obstacles for the integration, but in some cases also opportunities arose out of these asymmetries - especially valid in economy and described by the phenomenon known as the ‘border effect’. It has most

often been reflected in the local economic dynamics and has used differences in legislation, workforce costs, real estate, etc., to allow economic players to profit from these differences, but also in the far-reaching effects described by van Houtum as 'elastic migration'<sup>2</sup>. However, within the common EU market the border effect should slowly phase out while reaching the main goal of reducing social and economic disparities between the member states. In this regard, the ESDP states that socio-economic and technological development should thus not cut down cultural identities, since this very diversity has been recognized as a significant development factor for the EU and must be retained in the face of European integration (EPRP, 2000).

In the past national borders functioned as developmental barriers. Because of their rigid role they effectively restricted the free movement of people and goods and influenced the orientation of the development from the border towards the interior of the country (centripetal orientation). Consequently they formed its centre and its periphery located at the borders of the country (Figure 1). These borders were tools for the development of a specific system developed by the national states, defined as the state-centric system. The hallmark of this system was a particular form of territoriality used by state governments to control resources and people and made the bounded territory of the state the primary focus of economic, political, and cultural identification for its citizens (Anderson, O'Dowd, 1999). Consequently, the development was focused inwards, especially on intensifying the relations among the national centres, while the infrastructural and other connections across the borders remained weak or even undeveloped. It is necessary to stress that the limitations of the state-centric system were much more obvious within smaller territories, where the influence and the presence of borders was much higher.

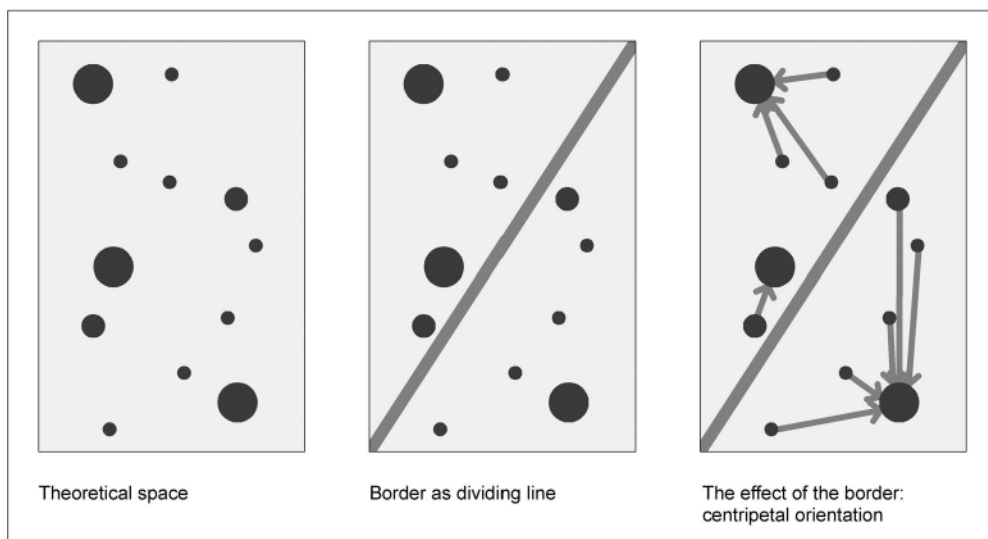


Figure 1: The centripetal effect of borders (Source: own archives adopted from van Houtum, 1998)

<sup>2</sup> Its main characteristic is that because of lower costs people own houses in the neighboring country, but their social and working life still takes place in the country of their origin.

Contrary to the territorial principles and as a sign of time, a new course of spatial development appeared at the end of the 20th century reflecting the gradual diminishing of the importance of borders and territoriality (Anderson, O'Dowd, 1999). Mlinar (1995) exposes the shift from the territoriality to the network principles of the organization of European society, where territorially closed systems are characterized by compactness, territorial autonomy, physical presence, completeness, multi-functionality, and the border as the main criteria. Conversely, the territorially open systems, associated with 'open borders', are characterized by selectivity, flexibility, dispersal, new nodes, trends towards non-centric links, accessibility and connections as the main criteria. As a reaction, the processes of cooperation and networking have been triggered at different levels, from the local, regional, to transnational, where the deterritorialisation of the new economic, social, cultural and spatial relations occurs (Hočevar, 2000). In case of open borders, the free movement of persons and goods is prevalent. The border is seen as a contact line, as a meeting place between nations or economic subsystems, as the centrifugal orientation takes place. Figure 2 shows the diminishing power of the border, whereby the units begin to connect on the basis of selectivity and not on the basis of the afore-determined relations.

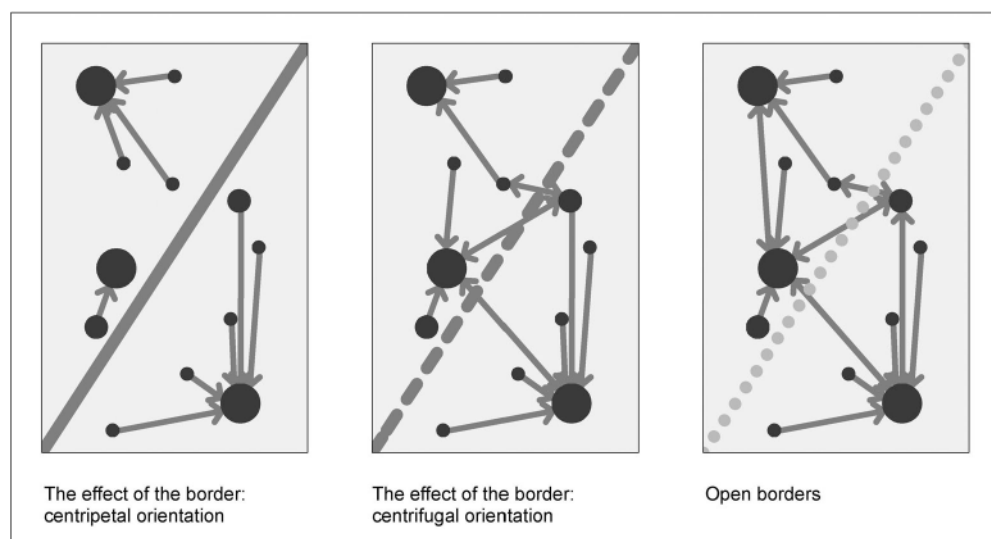


Figure 2: Centrifugal orientation

The consequences of the development of cross-border areas in line with the global spatial development trends indicate their impact on the settlement structures, which are closely related to the current developmental phenomena of urbanization in Europe ever since the second half of the 20th century. We can see the transformation of settlement patterns, both in cities and countryside, marked by two prevalent phenomena. On the one hand, a continuous, rapid urbanization and concentration of urban population in large cities is taking place accompanied by the sprawl of cities into wider geographical areas, accelerated by the rise of information technologies and mobility (Agenda Habitat, 1996). Human activities that were initially located in urban centres have started to spread widely into the hinterland, consuming rural and natural areas, thus

confronting this traditional rural space with major transformation. In scientific literature, this development phase has been described as the 'urban-rural compound' (Borsdorf, 2004), as 'outer city' (Winther&Hansen, 2006), and also as 'Zwischenstadt' (Sieverts, 1995). The differentiation of urban and rural elements fails to follow traditional descriptions, values, visual appearances and the functioning of space and society that we were used to, but rather defines new forms of spatial and social distribution of activities in physical space as a consequence of the global functioning and communications. The urban-rural compound represents a new form of spatial and social distribution of activities throughout space as a consequence of the global way of communicating and managing. The transnational streams have become unavoidable magnets for the allocation of specific contemporary contents, and important sites for economic and demographic development of the regions (Winther&Hansen, 2006). The urbanised landscapes along traffic corridors host new multifunctional centres located at the infrastructural nodes. Between such new nodes, one can find office parks and large commercial centres near airports, motorway-bound distribution parks, leisure centres, shopping malls and science parks in attractive natural scenery. New nodes occupy strategic locations along infrastructural corridors and ensure the necessary accessibility and greater spatial flexibility in comparison to the locations of a traditional city – above all from the viewpoint of land, land prices and development potential, as well as higher flexibility, specialization, good accessibility and universal identity. However, they also have negative attributes, causing heavy traffic, long commuting times and the resulting damage to the environment. The trends of dispersed urbanization in wider geographical areas indicate the transition from territorially closed to deterritorialised networks of spatial organization, with their focus in the general loosening of structures bound to territorially closed areas.

#### 4. CASE STUDY OF THE MARIBOR - GRAZ DEVELOPMENT AXIS

The research area is situated along the Maribor – Graz development axis, covering a cross-border area that stretches along the infrastructural corridor between both cities, but also including both cities as important regional centres, located at a distance of approximately 60 km from each other. The influence of the border is noticeable in both states, since Austria with 8,337,000 inhabitants and 83,858 km<sup>2</sup> (SA, 2009) shares as much as 8 borders with its neighbouring countries. Slovenia, with 2,032,362 inhabitants and 20,273 km<sup>2</sup> (SURS, 2009/a), shares borders with four neighbouring countries, whereby more than half of the territory belongs to what is called border areas (Pogačnik, 2000). In this context, the role of the city of Maribor is slightly accentuated, as it is located only 18 km from the border and the city of Graz 45 km from the border. Both cities also differ in size and their respective role in the administrative framework of both states. Maribor as the second largest Slovene city with 110,688 inhabitants (SURS, 2002) represents the centre of the Podravska region; according to the size and the role within the urban network of Slovenia it is classified as a middle-sized town of international significance (Zavodnik Lamovšek, Drobne, Žaucer, 2008). The city of Graz with 226,244 inhabitants is twice as large, also surpassing Maribor because of its role as the capital of the province of Styria (Ger. Steiermark). A short overview of the historic development of the area between both cities shows the tight connection to their current role in cross-border space.

#### 4.1 Historical Overview of Spatial Development in the Maribor–Graz Area

In the past, the research area between Maribor and Graz was a part of Austro-Hungarian Empire, which was divided after the WWI into several independent states, including the present Austria and Slovenia. After 1919 Slovenia has been part of various geopolitical formations, at first in the framework of the Kingdom of Slovenes, Croats and Serbs, afterwards as a federal republic in the framework of the former Yugoslavia founded in 1945. The year 1991 brought independence of Slovenia that became a member of the European Union in 2004. Looking at each of the periods (Figure 3), the border that surrounded Slovenian territory has been changing from open or closed, resulting in an immensely dynamic development of the area already in its foundations. Simultaneously, after decades of ambivalent role of borders, the basic conditions for achieving developmental equalities of both states were established.

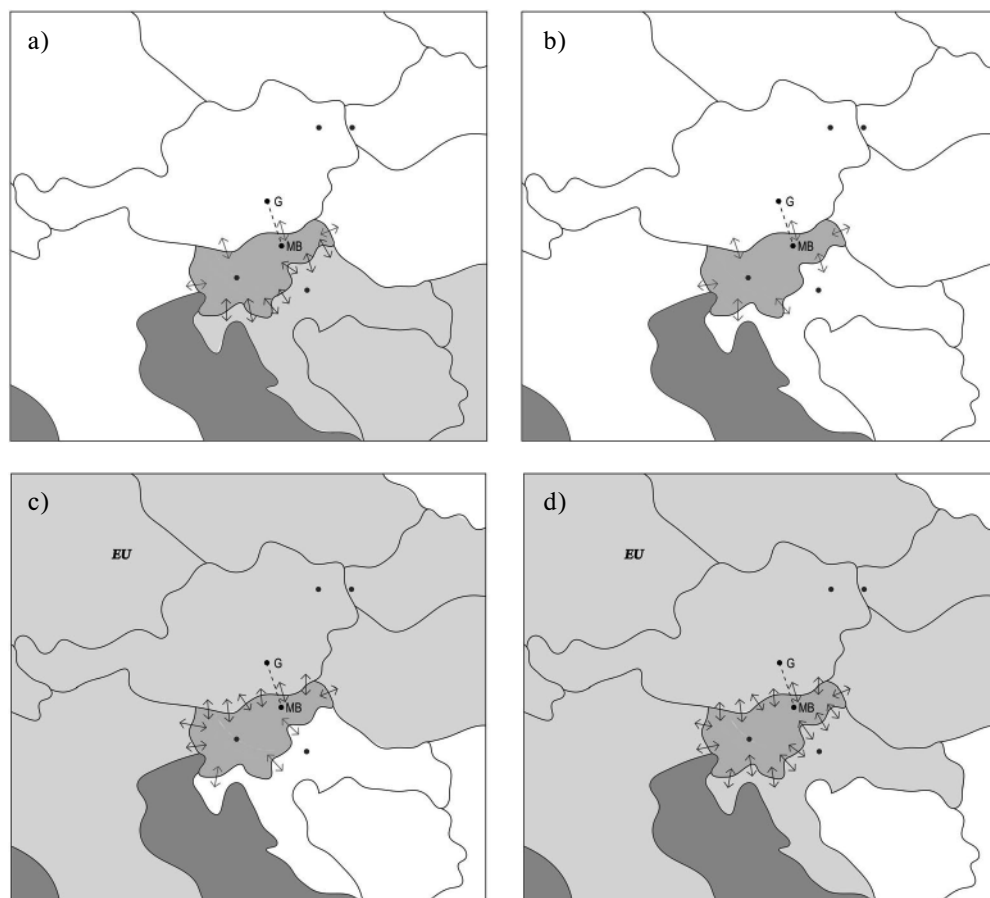


Figure 3: Schematic representation of different transitions of the Slovenian borders with regard to different administrative organisation of the Slovenian territory

- Slovenia as a federal republic within the former Yugoslavia (1945 -1991)
- Slovenia as an independent republic (since 1991)
- Slovenia as an EU member state (since 2004)
- Slovenia within the forecasted EU enlargement towards Croatia



## Period from the second half of the 19th century until 1919

At the time when the research area was still part of the Austro-Hungarian Empire, Graz and Maribor were connected to each other by the Southern Vienna-Trieste railway, which represented an important economic stimulus for the regions' development. Particularly extensive urban development was noted in the city of Graz, where the major concern in city planning was devoted to assuring sufficient housing and necessary public utility services; the city was already provided with urban-rail public transport (Moser, 1972). With the arrival of the Southern railway the city of Maribor actually changed its appearance from a country town to a town with well-developed educational system, military, food-processing industry, commerce and railway related industries (Lorber, 2006).

<b>Census Year</b>	<b>1869</b>	<b>1900</b>	<b>1923</b>	<b>1939</b>	<b>1961</b>	<b>1971</b>	<b>1981</b>	<b>1991</b>	<b>2001</b>
<b>Graz</b>	98,229	168,808	199,578	208,016	237,080	249,089	243,166	237,810	226,244
<b>Graz - Surroundings</b>	57,176	63,833	69,729	74,492	88,593	99,806	106,343	118,048	131,304
<b>Census Year</b>	<b>1869</b>	<b>1900</b>	<b>1910</b>	<b>1948</b>	<b>1961</b>	<b>1971</b>	<b>1981</b>	<b>1991</b>	<b>2002</b>
<b>Maribor</b>	12,828	24,601	27,994	62,677	82,560	96,895	106,100	124,650	110,668

Table 1: Number of inhabitants according to the census (Source: SURS, 2009/b; SA, 2008; Ferlež, 2002)

## Period between 1919 and 1970

In 1919, the research area was divided by the state border defined by the Saint Germaine Peace Treaty, followed by decades of isolation between both states. The economic, social, cultural and spatial development became oriented into the frameworks of both separate states. The period was characterised by a standstill in common development, decline in exchange and cooperation between both countries, and also marked by a different pace of development of the periphery and the interior of the country. Within both countries, the border areas on both sides of the border retreated into isolation, while both cities continued to develop intensively. Maribor became the first Yugoslav centre of textile and metal industry (Lorber, 2006), and the population grew accordingly (Table 1). Besides, the city gained political importance regarding the newly established border with Austria; while simultaneously losing the strong traditional connection with the north - with Vienna and Graz, in the economic-political sense it turned southwards (Pirkovič-Kocbek, 1982).

In 1938, the urban development of the city of Graz was heavily influenced by the annexation of 21 administrative units to the administrative area of 'Alt-Graz'. The surface area grew from 22 km<sup>2</sup> to approximately 120 km<sup>2</sup> (Moser, 1972). According to Moser, the planning of the city of Graz was seen in the context of the development potentials towards Croatia and other southern regions, particularly in consideration of the future importance of the area as an industrial and cultural centre (Moser, 1972). An extensive development of the city was foreseen for 350,000 inhabitants, with the expansion of the city towards the south. Finally, both World Wars obstructed the implementation of this plan. Afterwards, many areas that had been allocated as building land in these plans were changed again into green areas in order to stop the uneconomic fragmented development that was noted in the city suburbs already at that time.

## Period from 1970 to 1991

This period was characterized by warming relations between both countries supported by different cross-border initiatives, i.e., Trigon, Quadrigon community, and Alps-Adria Working Group. These circumstances were accompanied by the rise of cross-border flows and infrastructural improvements, such as the construction of the highway between Graz and Leibnitz in the 1970's and 1980's that was prolonged to Spielfeld in the 1990's. At the same time, the section between Maribor and Graz became part of large migration 'travel to work' routes, extending over the continent - called Gastarbeiter-Route<sup>3</sup> - while the Šentilj-Spielfeld border-crossing became an important gate connecting the traditional Eastern and Western Europe. This period was also characterized by growing disparities between both countries. In the 1970's, the lasting process of stagnation of economic development started in Maribor, particularly in the industrial sector (Lorber, 2006). It was characterized, among others, by the decline of the production sector and decreasing investments in the building sector. On the other side, over the same decades, social and economic restructuring of the Austrian border regions of Southern Styria and Burgenland started with substantial subsidies for agriculture, tourist farms, and viticulture (Karner, 2000). The border areas were also recovering due to the new impetus by 'shopping tourism', involving mainly customers from former Yugoslavia. In this context, smaller towns at the Austrian side of the border, such as Leibnitz, Strass as well as the Spielfeld border-crossing, began to develop mainly in commercial terms (Karner, 2000). With improved mobility and traffic by personal vehicles in the mid 1980's the city of Graz gained more importance in the cross-border flows.

## Period after 1991

The period after 1991 is characterized by a new motivation for strengthening the cross-border relations in the region - especially after Slovenia joined the EU in 2004. Austria joined the EU already in 1995. In the pre-accession period, the border regions received financial incentives, first from the Phare CBC programs, and later from different Interreg programs and cross-border

Field of cooperation	Name of project *
Economic cooperation	Technology axes Graz-Maribor
	Wirtschaftliche Entwicklung einer erweiterten Region - W.E.E.E.R.
	Länderübergreifende Gründerinitiative Slowenien-Südösterreich
Sustainable development	Upgrading of Strategies for Urban Development and Environmental Protection of the Regional Capitals Maribor and Graz
	BIO Network Steiermark – Slowenien
	Sustainable location management in cooperation between spatial and traffic planning
Cross-border tourism, culture and human resources	Erzherzog Johann wine cultural journey Graz-Maribor
	School-cooperation in 'Steierischen Grenzland' 2000-2006
	Steirischer Herbst Exhibition: 'Machen Sie mir dieses Land wieder...'

Table 2: List of selected Interreg IIIA project from different fields of cooperation (Source: [www.raumplanung.steiermark.at/](http://www.raumplanung.steiermark.at/) / 15.5.2006), (\*) the original project titles are quoted)

<sup>3</sup> Web page: <http://gastarbajteri.at/>, (9.10.2006).

projects in the field of economy, culture, education, etc. (Table 2). In 2001, the EU-REGION of North-eastern Slovenia and Styria<sup>4</sup> was founded (Table 2); although embracing a slightly broader area, it carries an important symbolic role with the aim of diminishing developmental barriers in different fields of development (EVROREGIJA, 2005).



Figure 4: EUREGIO NE Slovenia - Austrian Styria, (source: <http://www.euregio-steiermark.at>, 3.3.2005)

The city of Maribor started to recover after decades of economic stagnation, which was characterized by intensive dynamics of construction activities. After years of decay in the old city centre the process of revitalization started; on the other hand, a fragmented growth of the city edges was noted, especially after the year 2000. Until the Slovenia's independence, the city had developed in a planned manner, somehow paralysed by the lack of finances, which caused that the structure of the city remained compact for a relatively long time. Afterwards, the development drastically changed, to be marked by a general dispersion of urbanization outside the city area. In the 1999-2004 period, the majority of commercial and business centres were built in the suburbs of Maribor, many of them of regional importance (Drozg, 2006), indicating regional interdependencies and the growth of the city towards the outskirts.

#### 4.2 Identification and analysis of the new urban nodes

In the light of theoretical starting points and according to Meijers & Romein (2002), the analysis is based on the emergence of new urban nodes as one of the most significant indicators showing the intensification of interurban relations and streams within polycentric urban areas, thus reflecting the development dynamics of the research area (Figures 2.1-2.4).

<sup>4</sup> EU-REGION North-eastern Slovenia - Austrian Styria was founded in spring 2001 upon the initiatives of border EU-Regional Managements (RM South-west Styria, RM Eastern Styria, RM Graz and RM Voitsberg) of the Austrian Styria, as well as under support of the Department for regional and national planning and Slovene regional development agencies of the statistical regions Podravje, Pomurje, Koroška and Savinjska.

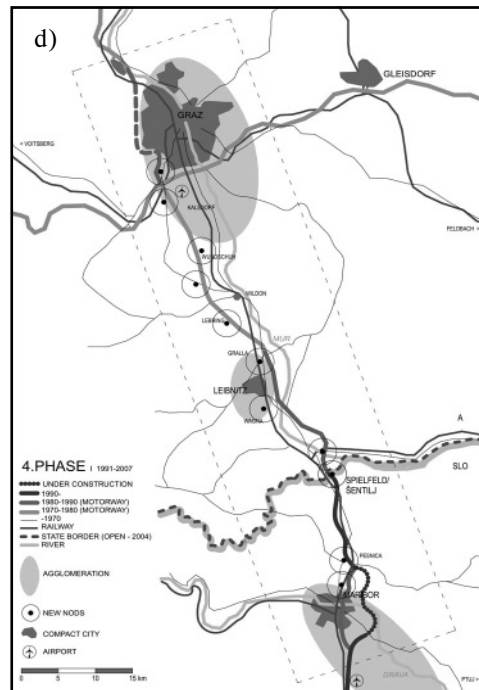
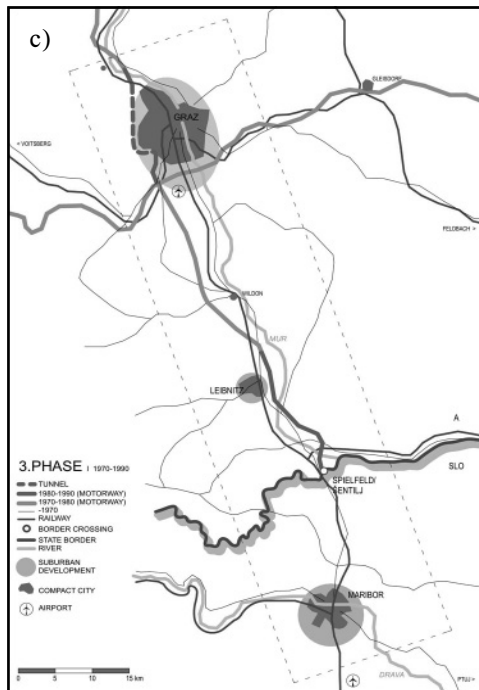
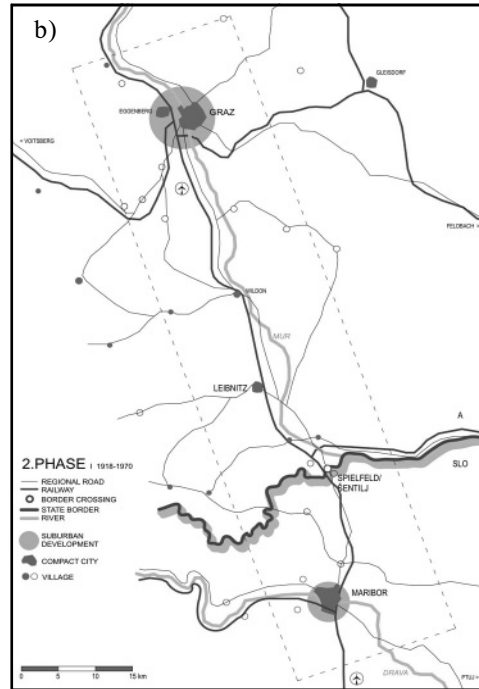
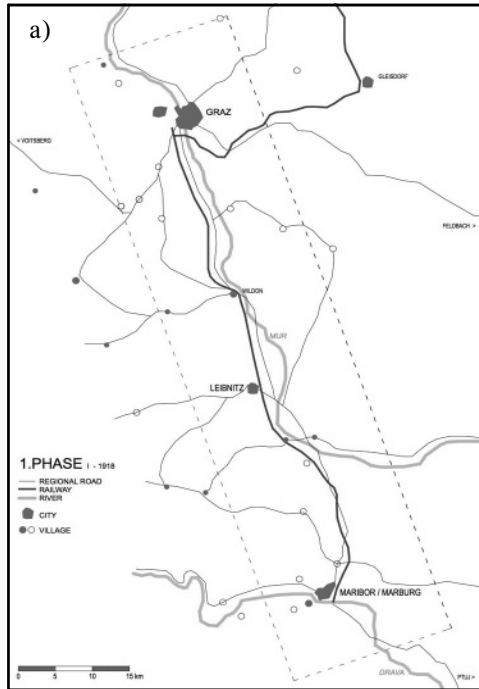


Figure 5: Urban and infrastructural development along the Maribor - Graz axis  
 a: the period from the second half of the 19th century to 1919 ; b: the period between 1919 and 1970  
 c: the period between 1970 and 1991; d: the period after 1991

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Urban node * (location, www address)	Year (phases)	Function	Surface area (ha)	Influence (L, R, N, I)*
Shopping Centre West/Graz	1989	Shopping centre	4	R
Shoppingcity Seiersberg/Seiersberg (www.shoppingcityseiersberg.at)	2004 2007	Shopping centre	6	R
Airport Graz/Feldkirchen (www.flughafen-graz.at)	1917 2005	Passenger terminal Freight terminal	-	I
Schwarzl Freizeitzentrum Unterpremstätten (www.sfz.at)	1984 1994	Sports centre Entertainment centre	25	R
Technologiepark Unterpremstätten (www.technologiepark.at)	2000	Business centre	17	N
Österreichischer Skulpturenpark Unterpremstätten (www.skulpturenpark.at)	2003	Cultural centre	7	R
Cargo Centre Graz/Werndorf (www.cargo-center-graz.at)	2003	Freight terminal	50	I
Copacabana gravel pit /Kalsdorf (www.copacabana.at)	1991	Sports centre	2	L
Impulszentrum Lebring (www.innovationszentrum-austria.at)	2000	Technology park	16	R
Kaindorf Trade zone	1993	Shopping facilities	-	R
Wirtschaftspark /Leibnitz-Wagna	1990	Business centre	6	R
Rosenberger Gralla Motorway station	1986	Motorway service station	1	L
Gralla Trade zone	1991	Shopping facilities	-	R
Šentilj/Spielfeld Border crossing	1955, 1980 2004/2007	Border crossing complex Undefined function	28	I
Stanovanjsko naselje (Belna)/Šentilj	2005	Housing complex	-	L
Casino Mond/Šentilj	2007	Entertainment centre	2	R
Štajerski tehnološki park Pesnica pri Mariboru	1994	Technology park	36	N
Avtocestno postajališče Agip Sp. Dobrenje	1997	Motorway station	-	L
Industrijska cona PesnicaSp. Dobrenje	1997	Industrial zone	12	R
DARS center Sp. Dobrenje	2009	Traffic support centre	1	
Avtocenter Porsche/Maribor (www.porschemaribor.com)	1995 2006	Shopping centre	5	R
Trgovsko-obrtna cona Košaki/Maribor	2006	Shopping centre	-	L

Table 3: New urban nodes along the Graz-Maribor axis  
(L, R, N, I)\*: L-local, R-regional, N-national, I-international, (\*) the original project titles are quoted

Based on the data from Table 3 and a detailed identification of the new urban nodes we found that the majority of them, with exception of a few locations, emerged as late as in the 1990's or later, partly as a consequence of intensive urbanisation of the city of Graz in southward

direction, and partly because of the intensified inter-urban cross-border flows which expanded the scope of locations for different service and business activities. The majority of the new nodes were identified on the Austrian side, along the longer part of the axis, though after 2000 intensified development has been taking place on the Slovenian side as well. An exception is the once important area of the international border crossing, which is now – together with the whole complex of buildings – an abandoned area.

The overview of the uses of new urban nodes (Figure 6) shows their heterogeneous nature and points out the importance of transport infrastructure. For this reason many new structures are primarily aimed at supporting transport, including several service and logistic centres on both sides of the border, such as the Graz Cargo Centre in Werndorf and Graz Airport in Feldkirchen<sup>5</sup>, both showing extraordinary development dynamics in the past few years, as well as numerous vehicle centres, petrol stations with supporting facilities, the former border-crossing in Šentilj, and the centre for traffic support in Pesnica built in 2009.

Among new nodes one can also find several large and medium sized shopping centres, located in the hinterland of both cities. Many retail facilities are situated south of Graz, where a large and rapidly developing centre in the municipality of Seiersberg was added to the existing ones in 2004. There are also several other centres, particularly in the vicinity of the motorway around Leibnitz. Recently, many new shopping centres have also been built around the city of Maribor to compete with the Austrian ones; this has caused the shopping tourism, once important generator of border crossings, to be in decline for several years now.

An important developmental phenomena identified within the infrastructural corridor are as many as five technology parks, which indicates a significant increase in the content and offering of allocations for economic activities organized in a modern manner. Furthermore, one can speak of the Graz-Maribor technological axis ('Technologieachse Graz-Maribor') founded in 1999 under the Austrian SFG with the aim to enhance the competitive position of companies in the region and their cross-border cooperation, active transfer of technologies and successful publicity of the cross-border region as a whole.

Table 3 also lists several multifunctional recreational centres located primarily around former gravel pits and used for recreational purposes, ranging from fishing to public bathing facilities. One of the oldest is the 'Schwarzl Freizeitzentrum' in Unterprämstätten, which has been constantly expanding throughout its 20 years of existence, playing the role of an important recreational destination for the population of Graz and the wider region. Similarly attractive is the Copacabana gravel pit close to the Graz Airport, with a newly built complex of holiday apartments. In 2000, a new large housing complex was also built in the immediate vicinity of the highway in Šentilj, where there is also a new entertainment centre, built in 2007, representing one of the last noticeable developments in the border-crossing area. Apart from the typical motorway-bound functions, this area also hosts several cultural centres, including the 'Skulpturenpark'

<sup>5</sup> Airport 'Flughafen Graz' has in the past 20 years tripled the number of passengers: in 1990 - 334.874, in 2008 - 1.008.330 (<http://www.flughafen-graz.at/> / 6.5.2009).

<sup>6</sup> SFG - Styrian Business Promotion Agency (ger. Steirische Wirtschaftsförderung).

sculpture park – established in 2003, when the city of Graz held the title of the European Capital of Culture and representing the only contemporary development devoted to culture – and the ‘Schwarzl Hall’ in Unterprämstätten which occasionally offers the stage for concerts, antique and art markets. The cultural content of the axis is still considered negligible compared to the cultural heritage of the hinterland with numerous churches, castles, and even archaeological excavations of the Roman settlements at Flavia Solva.

As this research encountered many difficulties concerning data collection, it was not possible to obtain all information on land surface for some of the locations. However, the analysis shows that the majority of new structures occupy large areas and possess the development potential in the sense of available surfaces for expansion.

At the beginning of this research we intended to present the number of foreign workers employed in each urban node to find out the intertwinement of the cross-border region. Later on this task was abandoned, mainly because the employment of foreigners in Slovenia and Austria is still determined by annual quotas and the open labour market does not exist as yet. This is the reason for the negligible number of Austrian citizens employed in Slovenia and vice versa, especially after 1991. To illustrate this point, according to the data of the Slovene employment agency, in July 2007 the administrative unit in Maribor registered only 34 Austrian citizens with a work permit, while only 299 Austrian citizens were registered (ZZRS, 2008) in the entire territory of Slovenia. The number of Slovene citizens working in Austrian Styria is slightly higher. According to the data from the AMS – ‘Arbeitsmarktservice’, in July 2007 there were 3805 Slovene citizens employed – 1270 in the Graz district and 861 in the Leibnitz district (AMS, 2007). The data about the employment rate in the researched area vary from month to month. Nevertheless, they reveal relatively modest intertwining within the cross-border area in this generally considered important aspect of cross-border activity.

The new urban nodes have also been assigned particular importance as regards their impact on a broader development in this area at different levels, ranging from local and regional to national and international. Concerning the assessment of influences, apart from the Airport Graz, only few nodes in the area are of international significance. They include the Graz Cargo Centre and the Šentilj/Spielfeld international border crossing; the latter only until 2007 when Slovenia entered the Schengen area. The supra-regional significance of technology parks must also be mentioned, while most of the remaining new nodes reach only local or regional status.

We find that spatial development in the cross-border area influences various development processes generated by different economic, social, and cultural factors in the narrow and broader area of the development axis. Among them, we have to expose the factor of traffic accessibility by means of the Maribor – Graz motorway<sup>7</sup>, regional and local links in the hinterland of the axis and the Maribor-Šentilj/Spielfeld-Lipnica-Gradec railway line.

<sup>7</sup> The axis represents the segment of the Pan-European Corridor X, XA.

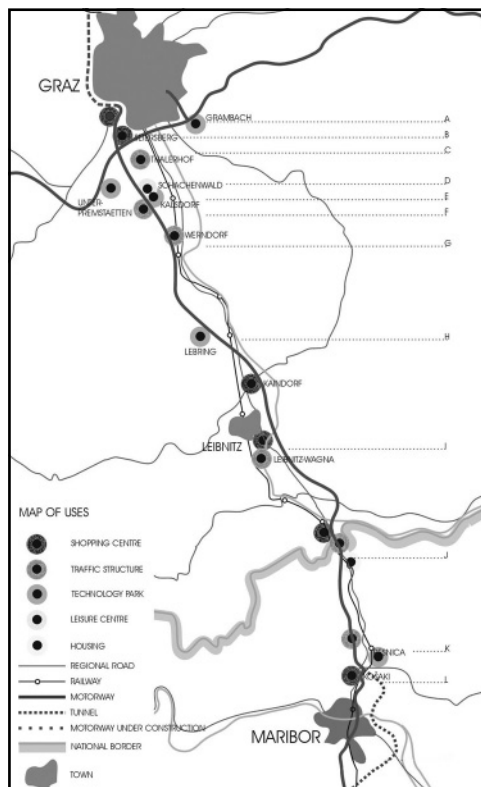


Figure 6: Map of uses of the new urban nodes

### 4.3. Development opportunities as a challenge for the future

On the basis of the analysis and explanation of the role and significance of the development of new urban nodes in the cross-border area of the Maribor – Graz development axis, which we have identified and schematically presented, we are opening up the following issues which will have a decisive impact – depending on the results obtained – on the future spatial development of this area:

- an important common denominator at the local level is the degraded area of the former Šentilj/Spielfeld border-crossing on both sides of the border; the restructuring of this area could be the best-practice case of cross-border cooperation at the local and regional level;
- the marginal location of the border area has always been a disadvantage, because it is almost completely non-distinctive as an independent economic and cultural space - this seems to be the common starting-point on both sides of the border, presenting possibilities for cooperation by trying to overcome the negative influences of historical division (Doytchinov, 2004); in the near future, the border area can experience non-linear development surges, especially because of the inflow of foreign capital, knowledge and culture;
- intensified cooperation of both cities in the sense of competitiveness and distinctness in



European space is the next common issue; although the cities differ in size, they both claim the position of the second biggest city in their respective countries, which could give rise to resolving their mutual issues; at the same time, on account of their closeness in geographical terms the two cities influence each other to a large extent, thus strengthening their position in the local environment (Zavodnik Lamovšek, Drobne, Žaucer, 2008);

- Maribor will hold the title of the European Capital of Culture in 2012; although the concept of the capital is based on the polycentric representation of several Slovenian towns<sup>8</sup>, the inclusion of e.g. Graz, as a city with a similar experience from 2003, is very important, since it offers an opportunity to represent Maribor and its role in the context of the cross-border axis development;
- the issues of daily problems encountered by the inhabitants living close to the border, which can be resolved in particular by a gradual removal of bureaucratic obstacles.

Considering the development possibilities of the cross-border area along the Maribor-Graz axis, with the aim to achieve common goals, we find that the general incompatibility of spatial and other data presents the largest obstacle to research and planning. It results in the confrontation of different legal systems, planner instruments, cultures and working methods. Because of differing starting points, both in the planning system and spatial organization, practical experiences point out the problems of incompatibility on all levels. The differences arise, among others, from different administrative organization in each country: Austria has a strong regional administrative level (Ger. Bundesländer) that takes all the responsibility for planning; on the other hand, Slovenia has no regional administrative or planning level that could have any important function in connecting the border regions – there are only two levels, the national and the local level. In this context, there is lack of spatial development vision for Slovene regions, and it is even vaguer in the cross-border areas, although the national documents stress the importance of cross-border cooperation between the regional centres and their cross-border partner cities (SPRS, 2004). However, we have also noticed a positive side in form of cooperation between different associations, universities and other institutions as inter-urban, inter-regional and international links, which – as compared to the past – promote better future for common development across the borders. Finally, we support the notion that the existence of common issues in the cross-border region can present a sound basis for development, since both parties have a mutual interest to resolve them (ÖROK, 2005).

## 5. CONCLUSIONS

The purpose and the main goal of this paper was to research the development dynamics, find reasons and problems regarding the development of the cross-border region between the cities of Graz and Maribor, and simultaneously recognize the development opportunities of the researched area. The research was based upon the changing influence of the border and identification of spatial development in the space between both cities. We have found that in the period since the opening of the border the development of the researched area, which had

<sup>8</sup> In the framework of European Capital of Culture, Maribor invited city municipalities of the Eastern Cohesion: Murska Sobota, Novo mesto, Ptuj, Velenje, Slovenj Gradec (source: <http://www.maribor2012.si>, 12.8.2009).

been affected by the presence of the border and the associated disparities in the past, has a new image reflected in the development of new urban structures and in a new way of cooperation among inhabitants and institutions on both sides of the former border. Within this research we have also established that changes in spatial development of the researched area are closely linked to its demographic, economic, and political development, topographical facts and the presence of the border as an important development factor from the past. In the first half of the 20th century the border did in fact hinder the development of this area, which consequently led to the underdevelopment of border areas, and spread the development of settlements between compact cities and traditional countryside. Now that the borders are open and free movement is possible, we can see the new image of the space along the infrastructural axis characterised by numerous new urban nodes. These new settlement patterns have drastically changed the character of the once underdeveloped rural border area into the rapidly developing corridor with possibilities for allocation of different economic activities, which also include high technologies. New urban nodes influence the relations between the cities of Maribor and Graz, which both show apparently uncontrolled urbanisation around city edges, and similarly to other middle sized European cities integrate with their hinterlands into broader functional regions. Thus, the axis enables the above regional interconnection in the context of the European space and should, with the opening of the borders towards the south, additionally gain in terms of social, cultural and economic value. It can be expected that the spatial development of the researched area will intensify in the future because numerous trends indicate that the expansion of both Maribor and Graz in particular will proceed into the space between the two cities. There are also many other links that work as threads connecting the area into a unit of different cultural but also economic and political interests. In this context, these micro relations – as those presented by the Maribor-Graz development axis on the EU scale – serve as an essential element for the area's development.

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