Linguistic and ethnic border changes within the frames of Ister-Granum Euroregion settlement group

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Abstract

The main objective of the study is to clarify the context of a data analysis with ethnic geographical approach, namely how the increased crossing traffic through the rebuilding Mária Valéria Bridge is reflected in the ethnic composition of the given Slovakian settlements. The spatial structure analyzes the direction and depth of the changes that are reflected through the three-decade nationality statistics. The study applies a set of concepts of ethnic geography and it explores the changes within the ethnic block zones and the Hungarian-Slovak linguistic boundaries in the region.

Keywords: Mária Valéria Bridge, ethnic structure of population, assimilation, ethnic geography, spatial structure analysis, ethnic blocks, changes of linguistic borders

Introduction

This study is based on official data about the social changes of the past 20 years, and it attempts to provide a reliable basis to assess the question whether the observable ethnic changes within the settlements that are influenced by the significant developments in infrastructure before and after the reconstruction of the Mária Valéria Bridge, may be interpreted as indicators of changes that may lead to the relatively fast and profound *rearrangement* of the region's ethnic spatial structure.

1. Conceptual frameworks of the research

1.1 Literary background

This study is mainly based on the theoretical approaches, definitions, methodology, hypotheses and case studies that reflect the Southern-Slovakian region, namely the ethnic structure model of the Levice District developed and defended in the dissertation thesis in 2003, at Eötvös Loránd University in Budapest, Faculty of Science, Doctoral School of Earth Sciences.[1] The study aims to answer the identified and articulated primary question. It does not deploy any serious theoretical literature and it deliberately avoids the clarification of historical and background interpretations, hence these domains are mentioned only in a summary form referring to the relevant parts and the most important sources.

The applied research method is built on the generally used methods in the frameworks of Hungarian social and regional geography (Nemes Nagy 1998; 2005). We can refer to specific parallels with Hungarian (Bottlik 2002a; 2002b; Tátrai 2005) and Slovak (Majo – Kusendová 2007) scientific sources for our applied methodology of ethnic geography; the latter agrees with the most important objectives of this study, with its analysis of language-related border changes.

When establishing the conceptual framework regarding the general background of the literature, the most important domestic scientific resources of ethnic geography (Keményfi 2004; Kocsis – Bottlik – Tátrai 2006; Kocsis – Tátrai 2013) should be mentioned.

1.2 Basic concepts

The conceptual framework of the study is determined by the criteria of ethnic geography, its approaches, definitions and methodological analysis tools. Based on observable changes of a given region's population, the study targets the depth of influencing factors, altering the frame of ethnic space and distribution that can be identified through changes of demographic indicators. Subsequently, the object of the current research is embodied by ethnic groups. These ethnic groups and their essence are understood through the prism of communication and they are understood as *local language communities*.

1 The spatial structure of ethnic distribution in regions with mixed population. (PhD thesis) ELTE Faculty of Science, Doctoral School of Earth Sciences. http://tgf.elte.hu/upload/doktori/farkasgydisszertacio.pdf

An array of ethnic structure within a specified settlement can be interpreted as a micro-region. Settlements in this group must have common borders, connecting infrastructure, road network and societal relationships and contacts as well. The *ethnic distribution* in these settlements is almost identical: it shows the considerable predominance of the given ethnic groups. The ethnic structure of individual settlements shows the same patterns, hence general predominance is characteristic for a certain ethnicity. Location of ethnicities and their continuous presence should be based on quantitative aspects, through exploration of ethnic share, distribution and composition in specific settlements. The applied census categories, such as *mother tongue* and *ethnicities* are two direct, but elusive statistical 'visualizations' towards ethnicities.

1.3 Hypothesis

Understanding the most important particularities of ethnic structure based on the assimilation process within the living environment, namely the fact that they can be explored through the relationship between assimilation processes and the ethnic structure of space. Ethnic survival of a community, existing as a minority within broader political frames, profoundly depends on its abilities to protect itself against the assimilation processes and against ethnic dissolution in their environment. In other words, successful defence is the strongest pledge of survival. If we accept all these presuppositions and suppositions as valid, we can state that the destiny of larger communities, who define and maintain themselves as national minorities, is connected to ethnic block structures. Hence, an explicit and clear link is visible between the block-like spatial structure and their prospects, and this correlation functions even stronger.

In this study, my hypotheses – underpinned by more detailed summaries – state that two radically different and perfectly identifiable periods can be identified. The hypothesized periods are closely connected to the changes in the broader social context of the local communities, and to the development of their everyday environment, too.

1. Period of mobility and mixing. The most markedly noticeable signs of the already mentioned link are present during and after war times, when tumultuous changes are implemented because of the existence of a power vacuum. This is a period of forced movement of the population and, at the same time, it is a period when strong external and violent interventions are implemented in the life of the local communities.

2. The period of homogenization, block formation. During this period, population development processes are not subjected to strong external influences. Local communities are formed, and they are gradually consolidated/stabilized. Their particular internal hierarchy, specific identity and their web of external relations are developed. This is the period when assimilation and environment conforming processes gain momentum.

The starting point of the hypothesis, regarding spatial and temporal frame of the study, was the presumption that the reconstruction of the Danube Bridge, the establishment of an uninterrupted connection between the two banks of the River and the increasing range of connections have opened the possibilities of cross-border relationship among communities that were previously strictly separated from each other. Subsequently, these newly established *cross-border* relationships may mitigate the peripheral situation of settlements, and they may achieve advancement.

a. This fact should empower local communities, the effect of which could be identified *through stopping the quantitative and proportional decrease of the Hungarian ethnic groups*, which now constitutes a minority in Slovakia and which previously was a significant majority group in the region, or even the population and ethnic loss *could be reversed, namely an increase could slowly begin*.
b. However, it cannot be supposed that within the period of two decades characterized by peace and passed without any significant external intervention, profound changes have taken place that *might have deeply shaped the basics* of the ethnic structure formulated after the Second World War.
c. The period which is under our scrutiny is one in which the *assimilation* of the minority to the regnant majority has surely gained ground in the broader political sense (the local Slovak speaking ethnic groups). This process has become more and more significant in the past 20 years; nevertheless, it cannot yet be depicted in the geographical sense. Although, this process has already generated explicit changes within the space that can be already displayed by statistics.

2. Implementation frameworks of the study

2.1 Temporal and spatial frameworks

2.1.1 Temporal frameworks

The study aims to determine the depth of possible changes within the ethnic structure through the analysis of demographical changes. Moreover, it intends to identify the effects of those processes which have been introduced by the reconstruction of the Mária Valéria Bridge, and their influence on everyday life of the citizens of the given area. The time frame of the analysis can be defined as the following: the comparison of ethnic structure before the reconstruction of the bridge and the changes which have been generated by the possible effects of the processes after the reconstruction. Thus, it is a comparison of population censuses from before the reconstruction and the data of the newest censuses. The Bridge was opened in 2001. It was a census year in the Slovak Republic; however, the census itself and the publication of data were carried out much later. Subsequently, relying on the census carried out in 1991 in Czechoslovakia was the most appropriate in our research. In the end, the analysis encompasses the period 1991-2011, and it uses the official data from the 1991, 2001 and 2011 censuses.

2.1.2 Spatial frameworks

The spatial framework of the research involves those settlements that are part of the Ister-Granum Euroregion.[2]

This area is situated in the Little Hungarian Plain (in Hungarian: Kisalföld; in Slovakian: Malá Dunajská Nížina) above the estuary of the Hron and Ipeľ/Ipoly rivers. More precisely, it is situated in its eastern corner, bordered by the western foreground of the Börzsöny Mountain. The Hron and Ipeľ/Ipoly valleys are the area where the Great Plain and the surrounding mountains meet, and they have been divided by the border separating Hungary and Slovakia since the end of the First World War. The region is crossed by Danube's border line.

Settlements of the region were formed on the terraces of the plain along the Ipeľ/Ipoly, the Hron, and the Danube rivers. These settlements are located next to the crossings of the rivers; in the valleys of the wide uplands of the Hron and Ipeľ/Ipoly hills; at the foot of the Burda Mountain. Their landscape classification

2 Compare with the chapter of Bottlik et al. in this book

was not performed in the past; although, it can be supposed that their peripheral situation, which has been lasting for 80 years, only with a short 7-year-gap, '*forced*' this geographical space into a peculiar border segment. The settlements here have evolved themselves into a unified small-region. Based on the peculiarity of their demographic, social or economic features, they can be hardly described as anything else than an area suffering from infrastructural, social and economic hardships, and facing challenges and stagnation because of its peripheral status. Due to its prolonged peripheral situation, its underdevelopment and the conservation of its rural character, this *crisis-region* has been stuck in a 'dead-end street' for decades. (Falťan – Pašiak 2004; Lelkes 2004; Halas 2008; Lelkes 2008)

However, it is important to note that the delineation of the area is not clear. From an administrative point of view, these settlements have never constituted a permanently compound unit, and most of them have clearly belonged to the catchment area of Esztergom and Štúrovo[3]. Its participation in the integration aspirations of the Euroregion and in the formulating institutional frameworks explicitly depended on the decisions made by local municipalities. This cross-border cooperation had a well-definable core area, namely the settlement group that is situated closest to the city of Štúrovo. However, participation in these processes could easily become a subject of local political games in the broader area, due to difficulties of practical implementation and due to a prospective share and advantages in development opportunities and projects. In other words, we cannot speak about the formulation of an independent organization without external factors.

Before the First World War, most of the settlements belonged to the District of Párkány of Esztergom County. Other settlements belonged to Bars County in the north, to Hont County in the east in the Ipeľ/Ipoly valley, and to Komárom County in the west[4]. In the *current* administrative structure of Slovakia, most of these settlements belong to the Nové Zámky District [26], Levice District in the north [17], and Komárno District in the west [5].

Nowadays, two *town-rank* settlements can be identified in the area, namely Štúrovo and Želiezovce. The former one is situated at the southern edge of the area, while the latter is located at the northern edge. Despite the peripheral location of Štúrovo, its catchment area can be easily defined. This is caused by the fact that this city is located next to the most important Danube crossing

3 Compare with the chapter of Mátyás Jaschitz in this book.

4 Compare with the chapter of Bottlik et al. in this book.

of the region. The reconstructed Mária Valéria Bridge is the key connection between the regional settlements, to Esztergom and the Esztergom-Dorog area, and even beyond, for example to the capital city of Budapest that had previously been practically closed off and separated from the region.

48 inhabited settlements can be found in the region. Medium and small sized villages are dominant; nevertheless, 4-5 bigger settlements can also be found.

Table 1: The settlement structure of the Slovakian part of the Ister-Granum Euroregion

	1991		2001		2011	
settlement – category	number of settlements	proportion of population* [%]	number of settlements	proportion of population* [%]	number of settlements	proportion of population* [%]
0 - 199	1	0.28	1	0.27	2	0.57
200 - 399	5	2.41	6	2.79	9	4.84
400 - 599	9	6.01	10	7.30	6	4.67
600 - 999	10	11.12	9	10.50	9	10.68
1,000 – 1,999	15	29.93	16	33.51	16	34.12
2,000 – 4,999	5	19.02	4	16.32	4	16.35
5,000 – 9,999	1	12.04	1	11.47	1	11.42
10,000 -	1	19.20	1	17.85	1	17.35
Σ	47	100	48	100	48	100

*Source: SŠÚ; Mestská a obecná štatistika [MOŠ] [*in the total population of the region]*

Table 1 presents the changes within the settlement structure of the region.[5] General and overall population decrease of the region plays a major role in these shifts. The increased number of small villages is noticeable. During the twenty years since 1991, the number of settlements with less than 400 inhabitants was only 6, but this number grew to 11 in 2011. Furthermore, the population of these very little settlements represented only 3% of the region's total population at the beginning of the research period; nevertheless, this number grew to more than 5% in 2011. The settlement category that included villages with population numbers between 400 and 1,000 decreased from 19 to 15. These settlements also suffered a decrease in the proportion of total population, namely they dropped from 17% to 15% in 2011. The backbone of the settlement structure is clearly formed by the villages with 1,000-2,000 inhabitants, which presumably have more social layers; consequently, they are more ‚viable'. Simply, they represent an ever-growing share of the population that increased from 30% to 35%. The number of settlements with a population between 2,000 and 5,000 inhabitants

5 The Municipality of Obid, which had formerly been part of Štúrovo, became separated in 1999.

showed a decreasing tendency, both in numbers and in population-share, i.e. they experienced a decrease from 19% to 16%. In their case, emigration losses might be caused by their prolonged inability to become towns with complex settlement functions, hence their stagnation is an important factor in the identified changes.

The situation of the two towns at the top of the region's settlement hierarchy has not changed. However, the loss of their population share is noticeable. To be specific, Štúrovo and Želiezovce jointly constituted more than 30% of the region's population in 1991, but this share was only 29% in 2011. Nevertheless, it seems that this shrinking process has come to stagnation at this level.

All in all, significant population decrease can be noticed at the top and at the bottom of the settlement hierarchy between 1991 and 2011. The loss of inhabitants in the smallest settlements is obviously more rapid than in town settlements where the migration balance also plays a significant factor. The *age structure* of the region's population also constitutes a significant factor. Large-scale and ever quickening tendency of ageing experienced in the villages of the region 'empty' the villages within a record time, and this is a phenomenon that cannot be substantially altered by the migrants arriving from other regions.

2.2 Database used in the research

The implemented analyses and research were based on the census data of the Slovak statistical office: total population of settlements and ethnic affiliation. The ethnic distribution, besides the unidentifiable ‚unknowns' was examined through three categories. All other ethnicities beyond the Slovak, Hungarian and Roma ones were included in the so called ‚other' category.[6]

6 The Roma population is not considered as an autonomous/independent and distinguishable element of ethnic spatial structure within the investigated region. Official statistical figures do not reflect the actual presence and share of the Roma/gypsy ethnic groups within the ethnic structure of the settlements. Actual and continuous presence of the Roma/gypsy population has not reached the level where they are identified as distinguishable Roma/gypsy spatial elements/units in the study area. The demographic processes of the region can bring changes in this respect: however, it is not the higher fertility level of Roma/gypsy communities that plays a decisive factor (higher fertility is somewhat balanced by higher death rate and lower life expectancy because of the peripheral situation of the region). Hence, the decreasing tendency of villages and the arrival of Roma/gypsy migrant groups from other regions jointly generate the changes in ethnic and demographic structures. The inner-settlement spatial ethnic segregation is an existing phenomenon in the communities; our study, however, does not discuss these factors.

It is a 'common knowledge' that the number of unknown, or 'other' ethnic affiliations significantly grew all over Slovakia during the census in 2011 (Gyurgyík 2012). Those groups of people who refused to clearly state their ethnic affiliation, referring to human rights, were formed by the highly educated people who are employed in intellectual work in large towns. This effect could not decisively appear in the explored area because of the general socio-economic conditions of the region and the characteristics of the settlement structure. Nevertheless, the number of people who categorized themselves as 'other' also grew in this region. Practically, this was visible in every settlement. However, growth of this tendency was not significant in such a way that it could cause changes in the *spatial structure*.[7]

Besides the settlements' ethnic distribution data, the study takes into consideration the changes in total population. Thus, our research does not attempt to carry out a profound and deep demographic analysis. It makes references to certain demographic developments at most, while examining the possible cause-effect relationship.

Table 2: Ethnic distribution of population living in settlements of the study area, 1991.

1991		Permanent population according to nationalities											
Settlements in districts	cat.*	Σ	Slovak		Hungarian		Roma		Other		Unknown	
			person	%	person	%	person	%	person	%	person	%
Levice	H_{sh}	21,659	7,005	*32.34*	14,379	*66.39*	114	*0.53*	129	*0.60*	32	*0.15*
Nové Zámky	H_{h}	40,099	6,510	*16.23*	33,106	*82.56*	120	*0.30*	313	*0.78*	50	*0.12*
Komárno	H_{h}	7,768	808	*10.40*	6,916	*89.03*	6	*0.08*	33	*0.42*	5	*0.06*
Ister-Granum Euroregion	H_{sh}	**69,526**	**14,323**	20.60	54,401	**78.25**	240	0.35	475	0.68	87	0.13

** Categorisations and their signs are explained more in detail in part 2.3.*
Source: SŠÚ; Mestská a obecná štatistika [MOŠ]

Table 3: Ethnic distribution of population living in settlements of the study area, 2001.

2001		Permanent population according to nationalities											
Settlements in districts	cat.	Σ	Slovak		Hungarian		Roma		Other		Unknown	
			person	%	person	%	person	%	person	%	person	%
Levice	M_{h}	19,989	6,984	*34.94*	12,541	*62.74*	236	*1.18*	157	*0.79*	71	*0.36*
Nové Zámky	H_{sh}	38,138	7,094	*18.60*	30,113	*78.96*	221	*0.58*	314	*0.82*	396	*1.04*
Komárno	H_{h}	7,478	888	*11.87*	6,506	*87.00*	36	*0.48*	35	*0.47*	13	*0.17*
Ister-Granum Euroregion	H_{sh}	**65,605**	**14,966**	22.81	49,160	**74.93**	493	0.75	506	0.74	480	0.73

Source: SŠÚ; Mestská a obecná štatistika [MOŠ]

7 Naturally, there was a significant growth in the numbers of the *unknown* category in certain settlements. The data from the city of Štúrovo are even more striking, but not surprising. It is the most urbanised settlement of the area (1991: **20** people [0.15%] → 2001: **157** people [1.34%] → 2011: **1,202** people [11.01%]). In contrast, Želiezovce experienced growth in the ‚unknown' category that could be classified as extraordinary in its character (1991: **9** people [0.11%] → 2001: **60** people [0.80%] → 2011: **76** people [1.06%]).

Table 4: Ethnic distribution of population living in settlements of the study area, 2011.

2011		Permanent population according to nationalities											
Settlements in districts	cat.	·	Slovak		Hungarian		Roma		Other		Unknown	
			person	%	person	%	person	%	person	%	person	%
Levice	M_{bh}	19,035	7,516	*39.49*	10,837	*56.93*	242	*1.27*	123	*0.65*	317	*1.67*
Nové Zámky	H_{sh}	36,686	7,641	*20.83*	26,120	*71.20*	238	*0.65*	293	*0.80*	2,394	*6.53*
Komárno	H_{h}	7,229	987	*13.65*	6,019	*83.26*	45	*0.62*	44	*0.61*	134	*1.85*
Ister-Granum Euroregion	H_{sh}	**62,950**	**16,144**	25.65	42,976	**68.27**	525	0.83	460	0.73	2,845	4.52

Source: SŠÚ; Mestská a obecná štatistika [MOŠ]

Figure 1: Ethnic distribution of population living in settlements of the study area, 1991.

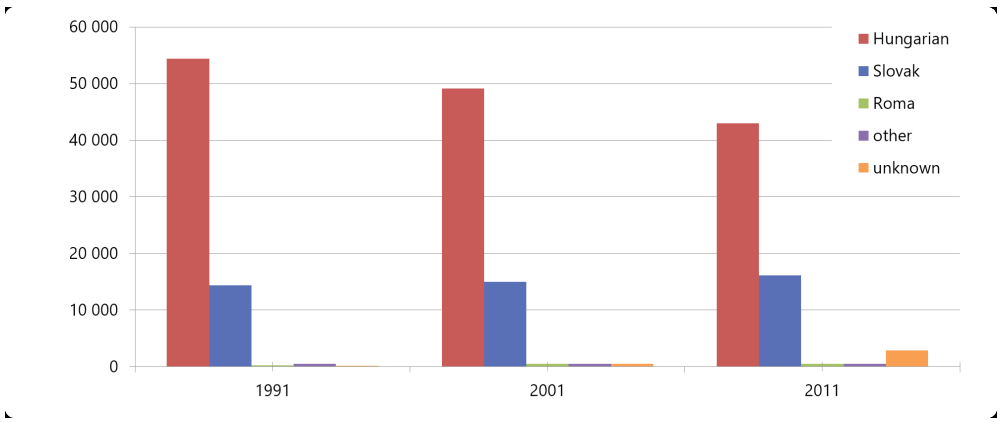


Table 2 through Table 4 as well as Figure 1 demonstrate that well-identifiable, unbroken trends, taking place in the last three decades, are visible within the region's *ethnic composition*:

A) Changes in the total population of the studied area

The total population of the study area was close to 70,000 in 1991. However, it decreased to 63,000 in the last three decades. This shows an overall population decline of almost 10% between 1991- 2011 [-9.46%].

The biggest drop was experienced in the northern settlements in Levice District. They suffered a 12.12% loss. Nové Zámky District, which encompasses most of the settlements of the study area, experienced an 8.51% decrease; while the decrease was 6.94% in Komárno District. The demographic decline was stronger between 1991- 2001, while it was *moderate* in 2001-2011. These demographic tendencies were visible both in the analysis of a settlement group and in the analysis of the whole area.

Demographic increase could be indicated only in four settlements between 1991 and 2011. It was only in the case of Nána, the settlement with the biggest demographic increase (47 people, 4.15%), an increase was experienced in all three censuses[8]. This positive trend can clearly be attributed to the effects of the suburbanization processes in *Štúrovo*. In the other three settlements, the decline that had been characteristic for the period 1991-2001 turned into a positive shift during 2001-2011 (Lontov [13 people; 1.89%], Hronovce [24 people; 1.63%] (Levice District); Bíňa [10 people; 0.69%] (Nové Zámky District).[9] In the whole study area, there were seven settlements, all of them located in the Nové Zámky District, which experienced modest population increase, but this positive trend was not sufficient to offset the negative demographic decline that had happened between 1991 and 2001; consequently, these settlements still suffer a demographic decline through the whole study period. Nevertheless, there are interesting cases, like Kamenica nad Hronom located near the city of *Štúrovo*. The decline here was -93 inhabitants (-6.68%) between 1991 and 2001, but the settlement experienced a growth in the following decade, specifically, there was an increase by 65 inhabitants (5.00%) during 2001-2011. This increase can be attributed to the suburbanization processes of *Štúrovo*.

The population of the study area declined by 10.46% between 1991 and 2011. The most extreme demographic decrease was identified in Bielovce in Levice District. The settlement had 360 inhabitants in 1991, but it lost 128 residents that represented a 35.56% decrease. Consequently, it only had 232 inhabitants in 2011.

The population of the two towns declined in both periods. The rate of demographic decline experienced in the period 1991-2001 was halved in both cities during 2001-2011.[10]

Migration tendencies are not object of the current research; nevertheless, it is important to note that the area became, as opposed to the previous period, the target of a constantly growing external migration during the period 2001-2011.

8 1991-2001: **29** people; 2001-2011: **18** people.

9 The details are worth noting in the cases of Lontov and Bíňa. Population of Lontov was 689 in 1991 and it suffered a decreased by 60 inhabitants. As a result, its population was 629 in 2001 (-8.71%), but its population grew to 720 in 2011 that was an increase of 73 (11.61%). The numbers are more modest in Bíňa. To be specific, population dropped by 16 inhabitants (-1.10%) in the first studied period, but it increased by 26 people (1.81%) in the second period. In both cases, changes can be explained by more intensive *migration*. It is important to highlight that Hronovce has a psychiatric institution and a therapy center in the village; subsequently, the number of patients can influence the demographic processes of the settlement.

10 Štúrovo, 1991-2001: 1,639 people [-12.28%]; 2001-2011: 789 people [-6.74%] // Želiezovce, 1991-2001: 851 people [-10.16%]; 2001-2011: 336 people [-4.47%]

B) Changes in the number of ethnic Hungarians

The number of Hungarians living in the settlements of the study area was almost 55,000 in 1991. [54,401 people; 78.25%] During the 30-year study period, the number of inhabitants *dropped* by 11,000 people, thus the number of ethnic Hungarians was 43,000 in 2011 [42,976 people; 68.27%]. The degree of decrease was 21.00%.

The biggest decline of ethnic Hungarians occurred in the northern settlements of Levice District where the decrease was 24.63%. In the settlements of Nové Zámky District, which constitute the majority of the study area, the loss was 21.10%. In the settlement group of Komárno District, the decline was 12.97%. When we compare the decline rate of ethnic Hungarians between the periods 1991-2001 and 2001-2011, it becomes clear that the loss was present in both periods, but the decrease was stronger in the latter one, that is, the tendency *intensified*.

There is *no settlement* in the study area that showed a demographic increase of ethnic Hungarians during the 1991-2011 period. In *all settlements* of the study area and in both periods including three censuses, the number of Hungarians unanimously *fell*. The average decline of the Hungarian communities was 257 during 1991-2011. The most modest demographic decline was experienced in the settlement of Kuraľany, namely 4; however, it must also be mentioned that this is the only settlement of the region which has a Slovak majority ethnic structure. High speed of decline was reported in the city of Štúrovo with 3 180 people that is equal to 32.44% of the population there. The average degree of decline was 22.17%. The highest *degree* of demographic decline of ethnic Hungarians was identified in the settlement of Bielovce in Levice District. The loss was very high, namely 45.45% (155 people). Because of the above, the number of ethnic Hungarians dropped from 341 in 1991 (94.72%) to 186 in 2011 (80.17%), while in the same study period, the local ethnic Slovak group *doubled* from 14 (6.20%) to 28 (12.07%). In the city of Želiezovce, the Hungarian ethnic group shrank by 981 people, i.e. the loss was 21.89%.

Already based on these data, the research hypotheses forecasting the *growth* of Hungarian communities both in numbers and proportionately as a result of the opening of Mária Valéria bridge can be *refuted*.

C) Changes in the number of ethnic Slovaks

The number of Slovak inhabitants in the study area was above 14,000 in 1991. [14,323; 20.60%] During three decades, the Slovak community experienced a rise by 2,000 inhabitants, hence their number was around 16,000 [16,144; 25.65%]. The rate of increase was 12.71%.

At the level of districts, the demographic tendency that was visible in case of ethnic Hungarians alters in the case of ethnic Slovaks. The biggest increase of ethnic Slovaks occurred in the settlements that are part of Komárno District, with an increase of 179 people, a 22.15% rise between 1991 and 2011. The second biggest increase was experienced in the settlements of Nové Zámky District, where the number of ethnic Slovaks grew by 1,131 people, 17.37% increase. Modest growth was measured in Levice District. To be specific, there was an increase by 511 people, constituting only 7.29%.

At settlement level, there were only six settlements where a *decrease* of ethnic Slovaks was indicated between 1991 and 2011. The number of Slovaks decreased in Kuraľany (Levice District) where the ethnic Slovaks are already in majority (138 people; -21.04%), in Malé Ludince that belongs to the same administrative unit (3 people; -10.34%), and in settlements of Nové Zámky District, Rúbaň (24 people; -12.57%) and Belá (21 people; -24.42%[11]).

In the settlement of Obid, which previously formed part of Štúrovo city, the number of ethic Slovaks *did not change* during 2001-2011. Nevertheless, there was an increase of Slovak people in the other 41 settlements. The average of this increase was 34 people, which means a 61.08% rise during 1991-2011. The maximum *degree* of increase (26 people, 236.36%) was measured in Malá nad Hronom and in Svodín (147 people, 40.85%), both settlements are in Nové Zámky District.

Despite the increase of the Slovak inhabitants (2,000 people) in the whole study area between 1991-2011, the number of Slovaks *dropped* in the city of Štúrovo in both study periods [16 people; -0.48% // 364; -11.05%], and in Želiezovce this only occurred between 1991-2001 (239 people; -6.32%). In the following decade, the number of Slovak inhabitants of Želiezovce grew modestly, by 7 people (0.20%). The continuous decrease of the ethnic Hungarians and the slow increase of the ethnic Slovaks generates a new ethnic distribution of the city: the

11 Out of all the settlements, this is also the *maximum* decrease of ethnic Slovaks.

city still has a mixed ethnic structure, but now it also has a mild Slovak majority for the first time since the middle of the 19th century.

The strengthening status and the quantitative/proportional increase of the Slovak ethnic groups is an unquestionable fact that cannot be altered by opposing tendencies experienced in the two towns and the completely Slovak settlement of Kural'any. This tendency should be investigated together with the above-mentioned quantitative and proportional decrease of ethnic Hungarians. Ethnic distribution changes (both quantitative and proportional) can be explained by the ever-increasing migration of the Slovak population into the area and by the intensified assimilation processes of the Hungarians, too. These two factors go hand in hand and they modify the ethnic structure of the study area.

D) Changes in the number of unknown ethnicities

It is highly important to discuss the group of so-called unknown ethnicities that were already mentioned in the introduction. It is a group whose ethnicity cannot be clearly identified, or who refused to declare any ethnic affiliation. This group had 87 members within the settlements of the study area in 1991, amounting to 0.13% of the total population. Ten years later, this number rose to 480 people (0.73%). In 2011, a dramatic increase was experienced, and this category counted 2,845 people, that was 4.52% of the total population. The growth of this category is worth to note indeed since the growth rate was 96.94% between 1991 and 2011.

This process can hardly be considered as a catalyst for spatial structure changes; however, it seems that it may have significant effects on local level and on ethnic distribution. The emergence and the rise of this trend may indicate change, alteration and/or weakening of identity patterns, and it may signal the appearance and strengthening of urban character, network and behaviour.

Thus, it is worth to examine the connection between the experienced shifts in the major ethnic groups and in the unknown category. According to the linear correlation calculation (Nemes Nagy, 2005: 137 – 141), a *moderate, negative* [-0.3476] (suggesting an opposite direction) correlation is present between the *degree of change* in the share of the ethnic Hungarian population in 1991-2011 and the unknown/unidentifiable population *share* in 2011. Subsequently, we can conclude (with appropriate caution) that the degree of shrinkage of the ethnic Hungarians, experienced in the last three decades, might have a moderate influence on the *high* numbers within the category of unknown in 2011. However, if we examine the

degree of change *itself* in both cases, the correlation between the degree of *change* of the Hungarian ethnic group between 1991-2011 and the degree of *change* of the 2011 unknown ethnic group between 1991-2011, the linear correlation results indicate *very weak, negative* relation [-0.1154].

If we compare the ethnic Hungarian group and its change between 2001 and 2011 with the unknown ethnic group's proportion in 2011, then there is only a *weak, negative* correlation (suggesting opposing direction) [-0.2524]. The result is different, if we examine the degree of the *change* in Hungarian population between 2001 and 2011, and the degree of *change* of the 2011 unknown/unidentifiable ethnic group between 2001 and 2011. In this case, the linear correlation indicates a *weak, positive* correlation [0.1206].

Subsequently, certain degree of correlation is present, at most a weak, inverse one, between the two examined tendencies, namely between the decrease in the size of the ethnic Hungarians and the high share of the unknown ethnic group, but this correlation is not strong and decisive at all. This allows us to conclude that the high emergence of the unknown ethnic group in 2011 may have certain influence on the ethnic structure; nevertheless, the tendency is not extensive in a way that it could *generally* and deeply influence the ethnic distribution of the study area as such. It is not clear whether this tendency was only a short phenomenon, or it will be a permanent element of ethnic distribution.

2.3 Settlement category-groups

According to the ethnic distribution data and ethnic proportion, settlements are divided into three groups.

1. The ethnicity is in majority position within the ethnic distribution of settlement. Quantitative dominance of the ethnicity generates a substantive influence on the life of the local community. It is important to underline the 'language environment' of the given ethnicity.
2. More ethnic groups live in the settlement and neither ethnicity has unquestionable majority and decisive position; furthermore, the quantitative dominancy is not overwhelmingly evident. Subsequently, the population structure of the settlement is mixed; besides the language of the ethnic group which may have a quantitative majority, other (several) different, coexisting, possibly intertwined language communities are also present.

3. The ethnic group is present, but its population group is minimal, or it is totally missing from the settlement structure. Thus, they do not form a separate ethnic community and they do not have any specific influence on the development of the language environment. Or, if they do, it is insignificant and negligible.[12]

The above described and explained classifications indicate the position of ethnic groups, but the principle of categorization would still be valid if the expression, 'nationalities', is used. What is more, the phrase of nationalities is 'statistically' more correct, since it (also) embodies a census category; nevertheless, this expression is a possible way of direct statistical representation of an ungraspable ethnicity.

Settlement types are grouped on the basis of percentages of the three major ethnic census categories, like Hungarian, Slovak, and Other.[13] Table 5 shows the results of this classification. Settlements marked with letter 'H' are the Hungarian ethnic communities; settlements with letter 'S' are those where the Slovak ethnic communities fulfil the above described category of a). Settlements indicated with letter 'M' are characterised by mixed population. The three basic categories can further be divided based on quantitative majority position of the individual ethnic communities within the ethnic structure of the settlements.[14]

In this classification, the ethnicity constituting a minimum of 65% of the population of the settlement is considered as the ethnic community that plays a ‚majority' role. Settlements, either with Slovak or Hungarian majority, are considered as mixed when a given ethnic community and its share is under 65%. If a community is under 35% of the total local population, their community is called *‚minority'*.

12 Logically: if this category applies to a *given* ethnic group and settlement, the dominant ethnic group is either in position that was described in category *a)* or in category *b)*.

13 It is important to underline once again that the *Roma* population is included in the ‚other' category. Based on *official* data, there is no settlement where this ethnicity has a significant presence in this area. However, it is an entirely different question what is the *real* share of the Roma ethnic group within the settlements. The Roma ethnic community is significantly present only in the northern part of the study area, namely in the municipality of Šalov. The *Hungarian speaking* Roma ethnicity can be regarded as characteristic for the whole settlement. [The size of the Roma ethnic group in Šalov, based on official data; 1991: 1 people (!) (0.24%); 2001: 28 people (6.29%); 2011: 41 people (**10.46**% - the highest share in the whole study area!)]

14 For better interpretation, an ‚o' letter is added into the categorisation framework, it means that ethnic groups in these settlements have ‚pure' majority, or it is a settlement with almost ‚perfect' mixed population.

Table 5: Settlement category-groups [based on distribution of ethnic proportion]

Percentage (%) of ethnicity with quantitative majority in the population	Hungarian	Slovak
	ethnicity in quantitative majority in a settlement indicated by category letters	
90 –	H_o	S_o
80 – 89	H_h	S_s
65 – 79	H_{sh}	S_{hs}
60 – 64	M_h	M_s
55 – 59	M_{oh}	M_{os}
45 – 54	M_o	

Source: http://tgf.elte.hu/upload/doktori/farkasgydisszertacio.pdf; Table 6., p. 57. [with modifications]

Further grouping (5%) of mixed settlements between 45-60% is introduced with the aim to follow the shifts in ethnic distribution within the settlement group. It is extremely hard to identify the consequences of the assimilation of nationalities, distinct ethnic groups, and 'language groups' in these settlement types, since assimilation appears in hidden ways and methods. It can be supposed that the groups which experience assimilation are the least settled and formulated ones, thus even small alterations and changes can significantly influence the whole area and its ethnic spatial structure.

2.3.1 Changes in the settlement category classification between 1991 – 2011

Changes in the settlement category classification mirror the shifts in the ethnic structure of the settlement from one group to another in the identified research period. These changes reflect the alterations within the settlement population. At this point, we focus only on the changes of the categories and we do not reflect on the changes in the proportions.

To analyse the spatial developments of the area, it is worth to examine the situation separately based on Table 2; Table 3; and Table 4.

Changes in the ethnic groups of the area between 1991- 2011 do not reach the necessary 'weight' that necessitates to implement a category change. The population structure of the study area can be characterized by a clear, but mild (and 'weakening') Hungarian majority and a strong (and 'strengthening') Slovak minority, hence it can be indicated with $\mathbf{H}_{sh}$ category.

However, when we examine the situation at the level of districts, significant movements and changes are noticeable.

Ethnic distribution of 17 settlements in Levice District mirrored the following picture in 1991: the northern periphery of the area had a mild Hungarian majority and a strong Slovak minority, thus it was categorized as $\mathbf{H}_{sh}$. By 2001, the area still had a clear Hungarian majority, but it was categorised within the mixed $\mathbf{M}_{h}$ category. The area once again underwent a change in 2011, it had a mild Hungarian majority, but it reflected mixed population and it was categorised as $\mathbf{M}_{oh}$. Subsequently, the northern border of the study area has been experiencing fast ethnic changes and the ethnic distribution *clearly moves* towards a mixed ethnic structure.

Changes within Nové Zámky District, which involves the largest number of settlements from the study area, show a completely different picture. Based on the ethnic distribution of the total population in the 25 settlements, this core area was categorised as $\mathbf{H}_{ahn}$ in 1991. This categorisation mirrored the presence of a considerable Slovak minority, but still with Hungarian majority. The changes within the settlements' ethnic distribution altered the previous category of this settlement group and it was categorised as $\mathbf{A}_{sh}$ thus reflecting a growing Slovak minority in 2001. The same category remained after the 2011 census, hence the ethnic structure of this region *stabilized* itself.

Finally, the status of the five settlements located in the south-western part of Komárno District remained the same. Based on ethnic distribution of these settlements, the settlement group was categorised as $\mathbf{H}_{h}$ between 1991 and 2011, and this reflects *unchanged* and undeniable Hungarian majority.

The *settlement-based* analysis of the *whole area* should be observed. Table 6 indicates notable changes within the settlement groups.

There was only one settlement in the study area that belonged to the Slovak majority (**So**) with higher than 90% during the period. This fact already demonstrates that, even in the framework of the study, this settlement may be regarded as an isolated case, which is further demonstrated by its position in the area. To be specific, this settlement is Kural'any, located in Levice District, close to the northern border of the area. It is a unique Slovak language island surrounded by a significant belt of Hungarian majority and ethnically mixed settlements since the 17th century, after reconstruction of the post-Ottoman occupation. Except for Kural'any, there is *no other* settlement in the area that could be characterised by Slovak majority (90-65%) within the ethnic distribution of the municipality.

Changes within the *mixed* categories mirror well-marked alterations and shifts.

Table 6: Number of settlements and population of the settlement category-groups, 1991 – 2011.

Cat.	Number of settlements						Cat.	Total population					
	1991		2001		2011			People			%		
	No.	%	No.	%	No.	%		1991	2001	2011	1991	2001	2011
S_o	1	*2.13*	1	*2.08*	1	*2.08*	S_o	674	591	535	*0.97*	*0.90*	*0.85*
S_s	-	-	-	-	-	-	S_s	-	-	-	-	-	-
S_{hs}	-	-	-	-	-	-	S_{hs}	-	-	-	-	-	-
M_s	-	-	-	-	-	-	M_s	-	-	-	-	-	-
M_{os}	-	-	-	-	-	-	M_{os}	-	-	-	-	-	-
M_o	2	*4.26*	2	*4.17*	4	*8.33*	M_o	9,847	8,992	11,081	*14.16*	*13.71*	*17.60*
M_{oh}	-	-	-	-	1	*2.08*	M_{oh}	-	-	1,286	-	-	*2.04*
M_h	1	*2.13*	2	*4.17*	5	*10.42*	M_h	1,382	3,101	14,302	*1.99*	*4.73*	*22.72*
H_{sh}	6	*12.77*	13	*27.08*	18	*37.50*	H_{sh}	18,367	24,751	22,176	*26.42*	*37.73*	*35.23*
H_h	16	*34.04*	17	*35.42*	13	*27.08*	H_h	21,392	19,199	8,816	*30.77*	*29.26*	*14.00*
H_o	21	*44.68*	13	*27.08*	6	*12.50*	H_o	17,864	8,971	4,754	*25.69*	*13.67*	*7.55*
Σ	47	100	48	100	48	100	Σ	69,526	65,605	62,950	*100*	*100*	*100*

Source: SŠÚ; Mestská a obecná štatistika [MOŠ]

At the beginning of the study period in 1991, there were only two settlements[15] mirroring a *completely mixed* ethnic structure, 50-50% distribution settlement category. These constituted 4% of all the settlements, and they represented 14.16% of the area's total population with their 10,000 inhabitants. Ten years later in 2001, this settlement group remained unchanged; although, its population had decreased, and it fell below 9,000, thus its proportional percentage also shrunk. However, profound changes were visible in the following ten years. The number of settlements characterised by mixed settlements were doubled; although, they still constitute less than 10% of all settlements (8.33%). Their population number significantly increased, and they had more than 11,000 inhabitants constituting more than 15% of the area's total population (17.60%). The growth of the completely mixed category was generated by two well-populated medium-sized settlements in the north: Dubník (2011: 1,695 inhabitants [H: 53.92%; S: 34.87%]) in the northwest and *Lontov* (2011: 702 inhabitants [H: 53.85%; S: 40.31%]) in the northeast.

15 Želiezovce within the Levice District (1991: 8,373 people; Slovak: 3,782 people [45.17%]; Hungarian: 4,482 people [53.53%]) and the neighbouring settlement located to the south, namely Hronovce (1991: 1,474 people; Slovak: 663 people [44.98%]; Hungarian: 760 people [51.56%])

Other mixed category settlements of the area included the settlements with Hungarian majority. There was only one medium-sized settlement within the M_h category in 1991. The middle-sized settlement of Dubnik was *temporarily* shifted into this category in 2001, since no substantial changes were experienced. Nevertheless, profound alterations and shifts were explicitly mirrored in 2011. To be specific, *Pohronský Ruskov* located in Levice District was categorised as M_h already in 1991, but the increase of the local *Slovak* ethnic community[16] altered the ethnic distribution of the community, thus it was pushed towards the mixed M_{oh} category.

In the case of *Dubník*, mentioned several times earlier, rapid transformation happened during the last three decades. In 1991, the population was characterised by clear Hungarian majority, thus it was included into the category of $\mathbf{H}_{sh}$. It was followed by a decline of the ethnic Hungarians, putting the settlement into another category in 2001, namely M_h. This settlement lost 162 inhabitants (-8.72%) between 1991 and 2011. The number of ethnic Slovaks grew by 68 people (13.00%), while the number of ethnic Hungarians fell by 394 people (-30.12%). Consequently, the share of the Hungarian ethnic group represented 70.44% in 1991, but it was reduced below 55% in 2011. It is important to note that the number of the unknown ethnic group showed an extreme growth in this settlement. High share and number of the unknown ethnic group (109 members, 6.43%) in 2011 is usually[17] characteristic of the neighbouring and narrower surroundings as well, and it is likely to be related to the presence of the Roma ethnic group above the average.[18]

16 1991: 464 people [33.57%] → 2001: 478 people [36.05%] (+14 [3.02%]) → 2011: 510 people [39.66%] (+32 [6.69%]). In the case of the ethnic Hungarians of the settlement: 1991: 894 people [64.69%] → 2001: 817 people [61.61%] (-77 [-8.61%]) → 2011: 720 people [55.99%] (-97 [-11.87%]). Pohronský Ruskov experienced dual tendency between 1991 and 2011. Overall settlement population decreased by 96 (-6.95%) people between 1991 and 2011. The number of ethnic Slovaks increased by 46 people (9.91%), whereas the number of ethnic Hungarians decreased by 174 people (-19.46%).

17 "*Unknown*" ethnic group and its share in the settlements near Dubník; Šarkan: 12.02% (44 people); Rúbaň: *9.47*% (92 people); Svodín: *4.86*% (125 people); Gbelce: 4.73% (105 people); Strekov: 3.26% (68 people). There is one exception to this tendency, which generally applies to all western settlements in the district of Nové Zámky: Nová Vieska: 1.09% (8 people), as well as Bátorové Kosihy, the latter located in the district of Komárno: 1.99% (68 people).

18 Changes in the size of the Roma ethnic group in Dubník; 1991: 11 people (0.70%); 2001: 1 person (0.06%); 2011: 69 people (4.07%). Size of the Roma ethnic group in 2011 (4.07%) in Dubník is the second largest in the *whole* study area.

Thus, the category of M_h lost both of its settlements between 2001 and 2011, but it gained 5 others. The case of Štúrovo is remarkable. The city had 73.45% Hungarian majority (H_{sh}) in 1991, but their share was only 60.66% in 2011.

The 60.66% Hungarian majority is the 'edge' of the M_h category. That means only a few tenths of percent difference separate the town from a more mixed M_{oh} category. This process is related to a dual tendency in Štúrovo. On the one hand, the city experienced a substantial decrease of its ethnic Hungarians by 3,180 people. On the other hand, the unknown ethnic group suddenly grew from 157 people to 1,202 people (11.01%) and this may substantially influence the categorisation of the city itself, since it can justly be supposed that a significant part of this unknown ethnic group has rather Hungarian ethnic ties. If only a few more people had selected an 'ethnic' neutral statement in the census, it would have pushed Štúrovo into the next category that reflects a much more mixed ethnic distribution of the town. Nevertheless, the inclusion of this town into the mixed category significantly strengthened the importance of the category group, because its population increased to 22.72% from 4.73%.

Out of the four other new members in the M_h category, *three* settlements are in Levice District, and their Hungarian ethnic proportion fell to 62%. Two settlements, Nýrovce and Čata, previously belonged to the category of H_{sh}, where the proportion of ethnic Hungarians was above 70%; and Šalov was previously part of H_h category with its ethnic distribution above 88%. The fourth settlement was Kamenica nad Hronom, located in Nové Zámky District, and the suburbanized demographic tendency of Štúrovo could have had an important effect on its population. The 145 increase of the Slovak ethnic group between 1991 and 2011, the decrease by 255 of the Hungarian ethnic group, and the growth of the unknown group from 1 to 79 (5.79%) in 2011 caused important shifts. To be specific, the Hungarian majority with its 81.26% proportion (H_h) in 1991 fell to 78.23% (H_{sh}) and to 64.25% in 2011.

Overall, the growth of the mixed category is obvious. Only 16.15% of the area's total population lived in a settlement whose ethnic distribution was mixed in 1991, this number increased to 18.44% in 2001. More than 40% (42.36%) of the total population lived in these mixed settlement categories in 2011. There is no need to once again underline the role of Štúrovo and its category change. In other words, these numbers show the tendency that there is a one-directional change of the ethnic distribution from a clearly Hungarian majority towards ever-mixing local ethnic communities.

The examination of the *Hungarian majority* categories is even more interesting and instructive.

The category that included settlements with the ethnic Hungarian proportion over 90% was the biggest category and it involved 21 settlements (44.68%) in 1991. The other two categories between 65-80%, to be specific, H_h included 16 settlements (31.04%), while H_{sh} involved 6 settlements (12.77%). Subsequently, the joint ethnic structure of these three categories could be characterized by a unanimous Hungarian majority (91.49%). From the aspect of population distribution, category of H_o with absolute Hungarian majority is only the third most populous, it had 17,864 members (equal to 25.69%). The most populous category was H_h with 21,392 members (30.77%), followed by H_{sh} with 18,367 members (26.42%). The obvious implication of this is that the "purest" Hungarian majority settlements (H_o) are usually located at the bottom of the settlement hierarchy, thus they form small or medium sized villages. All in all, 82.88% of the study area's total population lived in clear Hungarian majority settlements in 1991.

Ten years later, profound and serious changes are visible. The number of settlements belonging to the category of H_o decreased to 13 and their proportional share was reduced to 27.08%. The number of inhabitants in these settlements is even more explicit, i.e. they include 8,000 inhabitants less than in the previous period, hence their population number is 8,971 inhabitants (13.67%). Consequently, the other two categories with Hungarian majority highly expanded themselves, namely their number reached 30 settlements instead of the previous 22, and their joint proportion is increased to 62.50% from 46.81%. It is now completely obvious that small villages are the ones that primarily remain the "purest" Hungarian settlements.

Even with the population decrease, the most populated settlements were those having a Hungarian majority in 2001, but due to the ethnic distribution shifts of the settlements, the most populous is the H_{sh} category with 24,751 members (37.73%); category H_h had a population 19,199 (29.26%). Because the latter category includes the biggest number of settlements [17 (35.42%)], thus these are primarily small or medium sized villages.

By 2011, further changes within the ethnic distribution modify the picture even more. That means the a number of those communities where the ethnic Hungarian community's proportion is as described above dropped to six settlements (12.50%), their total population was halved compared to ten years before, since they include 4,754 inhabitants that is equal to 7.55% of the area's total population.

If we accept the logic that those local communities and ethnic groups are the least "subjected" to the assimilation tendency which are linguistically/ethnically almost completely homogeneous, we can state that the most significant external conditions for assimilation become increasingly common in the areas of settlements, and only those communities are left from assimilation that are characterized by high age and decreased population.

By 2011, we experienced similar changes in the category of H_h as well. The number of settlements characterised by an 80-90% proportion of Hungarian majority suffered losses and the number of included settlements fell to 13 (27.08%), the number of inhabitants decreased to 8,816 representing 14.00%.

By 2011, the loss of the Hungarian majority positions pushed settlements into the H_{sh} category. Settlements characterized by a 65-80% proportion of Hungarian population increased to 18 (37.50%), hence five more settlement are included in this category. Subsequently, this category remains the most dominant one, as was the case also in 2001, with 22,176 inhabitants (35.23%). Although, it is important that approximately 2,000 inhabitants were lost within a decade.

To conclude, we can state that the ethnic structure of the study area and its settlements undertake ethnic shifts that push them toward an ethnically mixed structure. What is more, the Slovak minority communities have gained strengthened positions even in those settlements, where ethnic Hungarians have a majority.

Table 7. illustrates the developments of the settlement category groups according to the two most populated ethnic categories.

It is important to highlight those elements which underpin and support the above-mentioned possible conclusions. An important fact is that only 11.28% of the ethnic Hungarians lived in communities that can be considered as mixed in 1991. This number gradually increased, i.e. it was 13.27% in 2001, and 34.54% in 2011. Subsequently, the proportion of Hungarian majority experienced an explicit shrinkage, specifically it fell from 88.69% to 65.33%. Moreover, one-third of the ethnic Hungarian community lived in settlements that offered certain protection against the assimilation processes in 1991; however, it was only one-tenth of the population who had this kind of ethnic protection in 2011.

Table 7: Ethnic distribution [Slovak (S) / Hungarian (H)] of settlement category groups, 1991 – 2011.

	persons						%											
	1991		2001		2011		1991		2001		2011		1991		2001		2011	
	S	H	S	H	S	H	S	H	S	H	S	H	S%	H%	S%	H%	S%	H%
S_o	656	17	572	16	518	13	97.33	2.43	96.79	2.52	96.82	2.71	4.58	0.03	3.82	0.03	3.21	0.03
S_s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S_{hs}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M_s	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M_{os}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
M_o	4,445	5,242	4,204	4,561	5,195	5,412	45.14	48.84	46.75	53.23	46.88	50.72	31.03	9.64	28.09	9.28	32.18	12.59
M_{oh}	-	-	-	-	510	720	-	-	-	-	39.66	55.99	-	-	-	-	3.16	1.68
M_h	464	894	1,058	1,960	3,964	8,755	33.54	61.22	34.12	64.69	27.72	63.21	3.24	1.64	7.07	3.99	24.55	20.37
H_{sh}	4,533	13,530	6,163	17,820	4,608	16,331	24.68	73.64	24.90	73.66	20.78	72.00	31.65	24.87	41.18	36.25	28.54	38.00
H_h	3,173	18,018	2,402	16,510	1,010	7,407	14.83	84.02	12.51	84.23	11.46	85.99	22.15	33.12	16.05	33.58	6.26	17.24
H_o	1,052	16,700	567	8,293	339	4,338	5.89	91.25	6.32	93.48	7.13	92.44	7.34	30.70	3.79	16.87	2.10	10.09
·	14,323	54,401	14,966	49,160	16,144	42,976							100	100	100	100	100	100

Source: SŠÚ; Mestská a obecná štatistika [MOŠ]

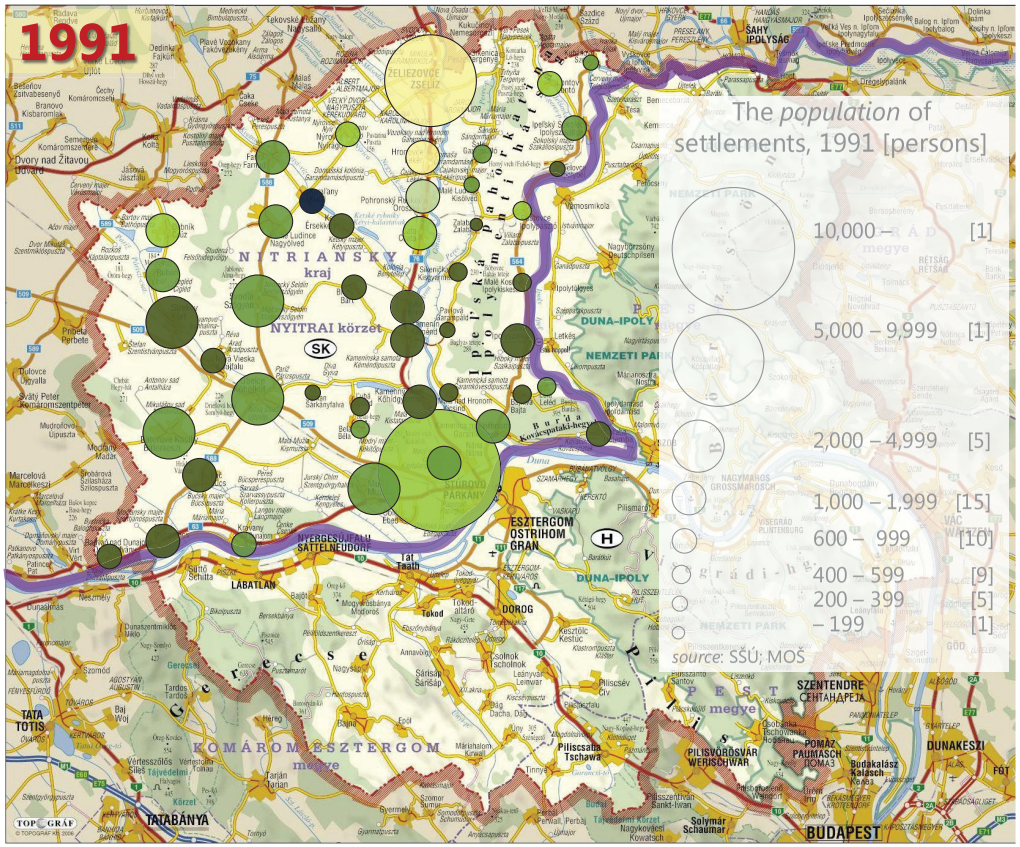
Table 8: Changes of settlement category groups, 1991-2011

		settlement category			settlements				population			
		1991	2001	2011	2011	%	2011	%	2011	%	2011	%
A	1	S_o	S_o	S_o	1	2.13	12	25.53	535	0.87	15,059	24.38
	2	H_o	H_o	H_b	6	12.77			4,754	7.70		
	3	H_h	H_h	H_h	2	4.26			558	0.90		
	4	H_{sh}	H_{sh}	H_{sh}	1	2.13			528	0.85		
	5	M_o	M_o	M_o	2	4.26			8,684	14.06		
B	6	M_h	M_h	M_{oh}	1	2.13	18	38.30	1,286	2.08	27,822	45.04
	7	H_{sh}	H_{sh}	M_h	3	6.38			12,556	20.33		
	8	H_{sh}	H_{sh}	M_o	1	2.13			702	1.14		
	9	H_h	H_h	H_{sh}	6	12.77			9,484	15.35		
	10	H_o	H_o	H_h	7	14.89			3,794	6.14		
C	11	H_h	H_{sh}	H_{sh}	6	12.77	10	21.28	7,944	12.86	12,408	20.09
	12	H_o	H_h	H_h	4	8.51			4,464	7.23		
D	13	H_{sh}	M_h	M_o	1	2.13	7	14.89	1,695	2.74	6,487	10.50
	14	H_h	H_{sh}	M_h	2	4.26			1,746	2.83		
	15	H_o	H_h	H_{sh}	4	8.51			3,046	4.93		
				Σ	47	100	47	100	61,776	100	61,776	100

It is worth to observe the most striking category group changes at *settlement level*, especially concentrating on their directions and geographical spatial peculiarities. The following figures illustrate the categorisation of settlements between 1991 and 2011.

Completely clear and obvious spatial patterns cannot be easily identified in the spatial location of settlements that are in ethnic distribution categories. Nevertheless, if we focus on the category change of settlements through Table 8 some typical and stable features can be pointed out.

Figure 2: Settlement categorisation of the study area, 1991



* Settlements on the ***Slovakian*** side of ***Ister-Granum*** *euroregion*

Using the map of **TOPOGRÁF** Ltd.

FGY

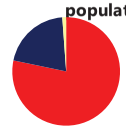
S ~ 1 : 250,000

Legend

Settlement categories **of local majorities, based on the distribution of population by** ***nationalities*** [%]

	Code	Local majority	
	H_o	Hungarian; 90 –	21
	H_h	Hungarian; 80 – 89	16
	H_{sh}	Hungarian; 65 – 79	6
	M_h	Hungarian; 60 – 64	1
	M_{oh}	Hungarian; 55 – 59	0
	M_o	H./S.; 45 – 54	2
	M_{os}	Slovak; 55 – 59	0
	M_s	Slovak; 60 – 64	0
	S_{hs}	Slovak; 65 – 79	0
	S_s	Slovak; 80 – 89	0
	S_o	Slovak; 90 –	1

The proportion [%] of *nationalities* from the population of settlements, 1991



Slovak
Hungarian
other + unknown

[This pie chart above, shows the proportion of given nationalities of *total* studied areas]

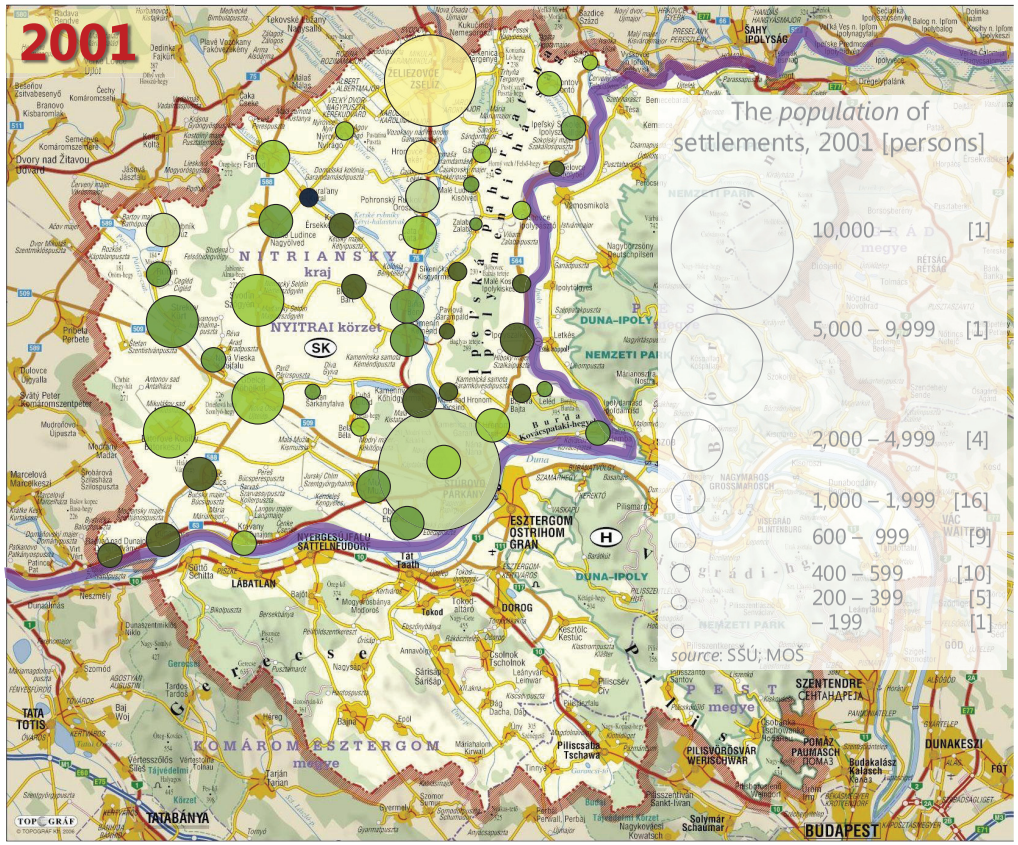
source: SŠÚ; MOŠ

○ settlements in the ***Slovakian*** part of ***Ister-Granum*** **euroregion** [**47**]**

state border HU/SK

** in 1991 Obid [Ebed] belongs to Štúrovo [Párkány]

Figure 3: Settlement categorisation of the study area, 2001.



* Settlements on the ***Slovakian*** side of ***Ister-Granum*** *euroregion*

Using the map of **TOPOGRÁF** Ltd.

FGY

S ~ 1 : 250,000

Legend

Settlement categories of local majorities, based on the distribution of population by ***nationalities*** [%]

	Code	Local majority	
	H_o	Hungarian; 90 –	13
	H_h	Hungarian; 80 – 89	17
	H_{sh}	Hungarian; 65 – 79	13
	M_h	Hungarian; 60 – 64	2
	M_{oh}	Hungarian; 55 – 59	0
	M_o	H./S.; 45 – 54	2
	M_{os}	Slovak; 55 – 59	0
	M_s	Slovak; 60 – 64	0
	S_{hs}	Slovak; 65 – 79	0
	S_s	Slovak; 80 – 89	0
	S_o	Slovak; 90 –	1

The proportion [%] of *nationalities* from the population of settlements, 2001

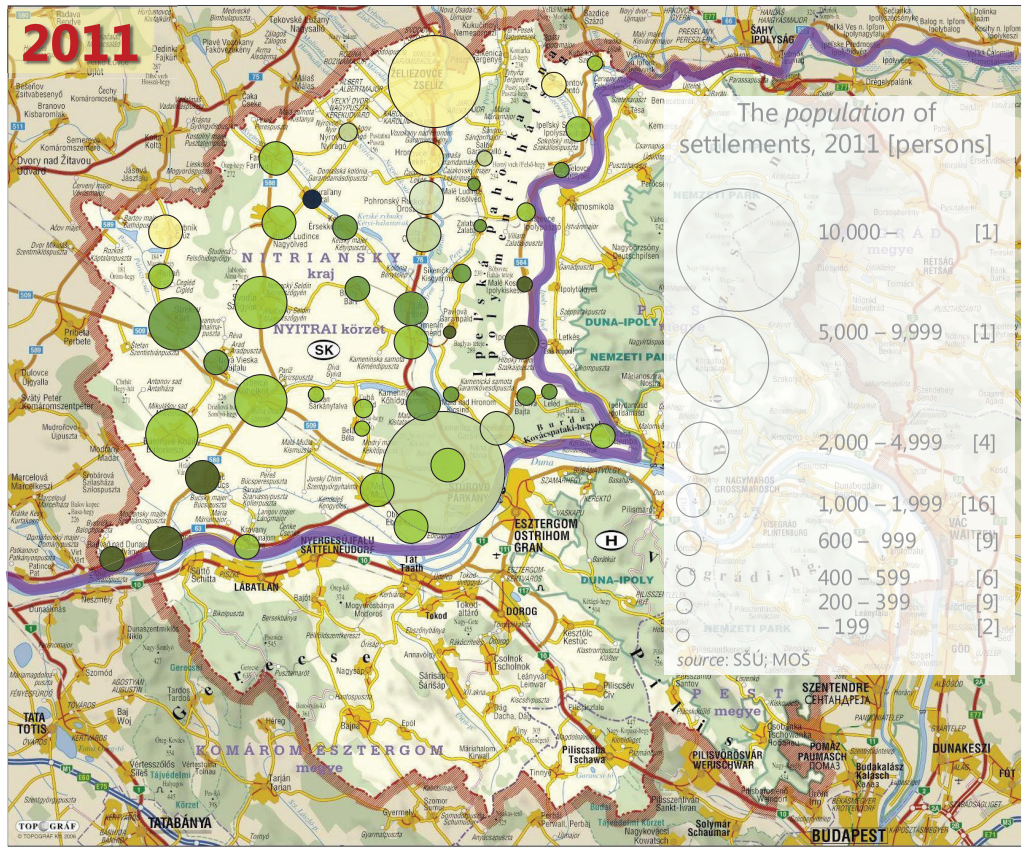
[This pie chart above, shows the proportion of given nationalities of *total* studied areas]

source: SŠÚ; MOŠ

○ settlements in the ***Slovakian*** part of ***Ister-Granum*** **euroregion** [**48**]

state border HU/SK

Figure 4: Settlement categorisation of the study area, 2011



* Settlements on the ***Slovakian*** side of ***Ister-Granum*** *euroregion*

Using the map of **TOPOGRÁF** Ltd.

FGY

S ~ 1 : 250,000

Legend

Settlement categories **of local majorities, based on the distribution of population by** ***nationalities*** [%]

	Code	Local majority	
	H_o	Hungarian; 90 –	6
	H_h	Hungarian; 80 – 89	13
	H_{sh}	Hungarian; 65 – 79	18
	M_h	Hungarian; 60 – 64	5
	M_{oh}	Hungarian; 55 – 59	1
	M_o	H./S.; 45 – 54	4
	M_{os}	Slovak; 55 – 59	0
	M_s	Slovak; 60 – 64	0
	S_{hs}	Slovak; 65 – 79	0
	S_s	Slovak; 80 – 89	0
	S_o	Slovak; 90 –	1

The proportion [%] of *nationalities* from the population of settlements, 2011

Slovak
Hungarian
other + unknown

[This pie chart above, shows the proportion of given nationalities of *total* studied areas]

source: SŠÚ; MOŠ

○ settlements in the ***Slovakian*** part of ***Ister-Granum*** **euroregion** [**48**]

state border HU/SK

Table 8 shows and quantifies the category changes of settlements in their 2011 ethnic structure. It is important to underline that these category changes are only changes within the ‚titles' of categories and they map the experienced real alterations in the ethnic distribution during the given research period.

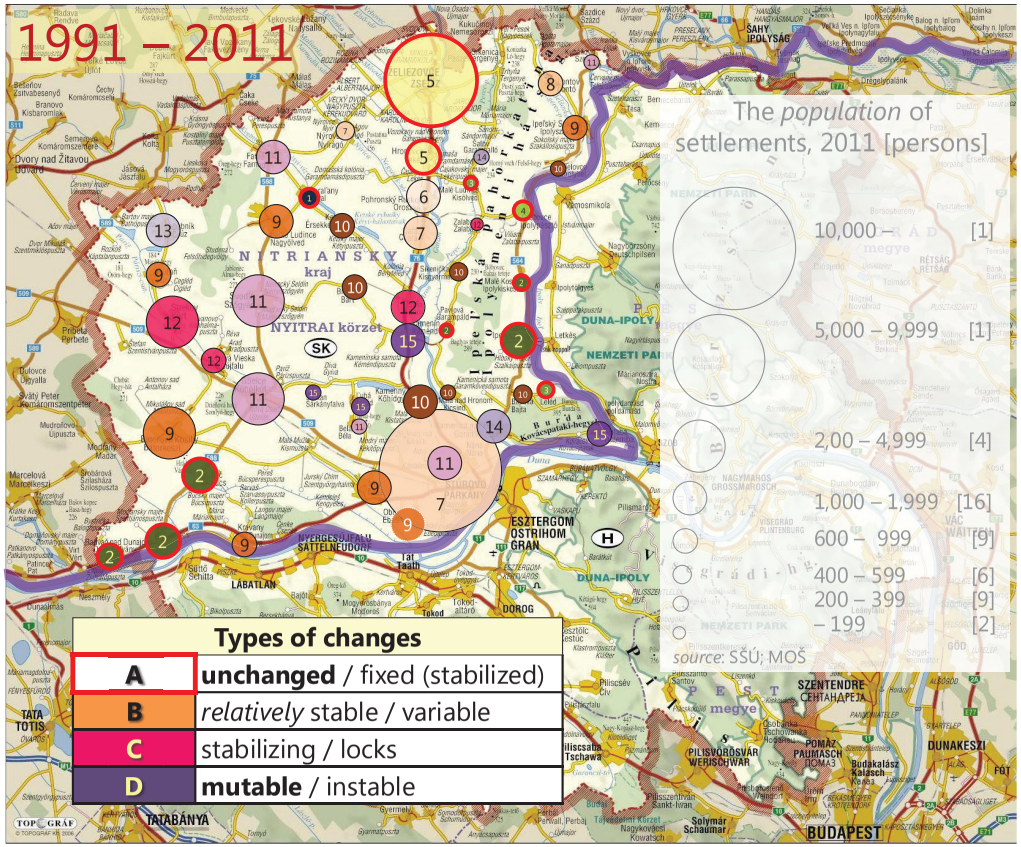
Based on seven categories, out of the established 11 ones, 15 distinct changes of patterns could be identified and distinguished during the three censuses. According to the hypotheses of the study and the principle of *constancy/ permanency*, 15 possible 'scenarios' could be gathered and organised into four groups, although it may seem contradictory.

The first large group [A] involves the settlements whose ethnic distribution can be characterised as fixed and unaltered. In other words, these settlements and their ethnic structure did not undergo so deep changes which would trigger their categorical shift, hence changes were experienced within the limits of the actual category. About a *quarter* of the study area's settlements can be put into this group: [12 settlements; 25.53%]. A total of 15,059 people lived in these settlements, representing 24.38% of the area's total population in 2011.

The second large group is a rather complex one. It comprises those change trajectories which are relatively constant; they can be regarded as fixed and wobbling. That means changes taking place during the three periods of time. The settlements had not experienced a category change during the first two periods, the category change and shift took place during the third one. Out of the five change trajectories that belong here, the case '$H_{sh} \rightarrow H_{sh} \rightarrow M_o$' (8) can be considered as a kind of an exception because the experienced shift, occurring at the end of the study period, was not a simple change and slide into a 'neighbouring' category, but it directly represented a bigger 'leap'. All in all, this large group is the most significant one, i.e. most of the settlements can be placed here (18 settlements, 38.30%). At the same time, it is also the most *populated* one, it had 27,822 inhabitants (45.04%) in 2011.

The third group contains only two possible change trajectories, but it is still considered as a significant group. It included 10 settlements (21.28%). These settlements are characterized by stabilized, fixed and steady changes: a category shift was experienced in the first period, but the ethnic distribution of the settlements was not altered in such a depth that further category changes would have been necessary during the two subsequent periods. 12,408 inhabitants live in these settlements representing 20.09%.

Figure 5: Settlement categorisation and changes of the study area



Legend

Settlement's category changes 1991 – 2001 – 2011

		categories			settlements			
		1991	2001	2011		%		%
A	1	S_o	S_o	S_o	1	2.13	12	25.5
	2	H_o	H_o	H_o	6	12.77		
	3	H_h	H_h	H_h	2	4.26		
	4	H_{sh}	H_{sh}	H_{sh}	1	2.13		
	5	M_o	M_o	M_o	2	4.26		
B	6	M_h	M_h	M_{oh}	1	2.13	18	38.3
	7	H_{sh}	H_{sh}	M_h	3	6.38		
	8	H_{sh}	H_{sh}	M_o	1	2.13		
	9	H_h	H_h	H_{sh}	6	12.77		
	10	H_o	H_o	Mm	7	14.89		
C	11	H_h	H_{sh}	H_{sh}	6	12.77	10	21.3
	12	H_o	H_h	H_h	4	8.51		
D	13	H_{sh}	M_h	M_o	1	2.13	7	14.9
	14	H_h	H_{sh}	M_h	2	4.26		
	15	H_o	H_h	H_{sh}	4	8.51		

Settlement categories of local majorities, based on the distribution of population by *nationalities* [%], 2011

	Code	Local majority	
	H_o	Hungarian; 90 –	6
	H_h	Hungarian; 80 – 89	13
	H_{sh}	Hungarian; 65 – 79	18
	M_h	Hungarian; 60 – 64	5
	M_{oh}	Hungarian; 55 – 59	1
	M_o	H./S.; 45 – 54	4
	M_{os}	Slovak; 55 – 59	0
	M_s	Slovak; 60 – 64	0
	S_{hs}	Slovak; 65 – 79	0
	S_s	Slovak; 80 – 89	0
	S_o	Slovak; 90 –	1

Finally, the fourth group involves those settlements that experienced three trajectories and they moved across categories in all time-periods. Hence, these settlements can be regarded as mobile, fluid, unstable: the relatively clear ethnic majority underwent a rapid ethnic loss that rewrote the ethnic structure of the settlements as a mixed one. In the study area, there were seven settlements which can be identified (14.89%) as those experiencing such a rapid ethnic transformation. 6,478 inhabitants lived in these settlements that represented 10.50% of the total population of the research area in 2011.

Based on Figure 5, the settlements which can be considered as fixed, whose ethnic distribution is constant, are located either at the bank of the Hron river, or on the western edge of the south along the Danube, or, thirdly, on the middle and southern part of the Ipeľ valley. It is evident that the settlements, sorted according to their change trajectories, greatly differ both in population and spatial position. Thus, no clear spatial connections can be identified here.

3. Conclusions

3.1 Outline of the spatial structure of ethnic distribution and possible changes

Figure 6 illustrates the spatial structure draft of the study area based on a hypothesis. Internal structure, built on the neighbourhood analysis, can be described by the settlement categories. Neighbourhood analysis, based on spatial auto-correlations built on their own average and neighbourhood proportion, attempts to eliminate the disturbing external statistical influences caused by insular enclaves. This approach of the neighbourhood analysis offers a simplification effect and the spatial distribution of the explored phenomenon is also transparent from the possible spatial point of view (Nemes Nagy 1998).

To understand the figure, it is important to underline that the language border can be understood as a language area and/or zone. As a result of the neighbourhood analysis, the particular and temporary position of certain settlements can be understood because they are located on the language border and within its zone. The trends of population movements of these settlements show a direction towards mixed ethnic distribution: the language border is located *inside* the settlement without clear spatial definition or identification.

Based on the data analysis, careful forecasts and suppositions can be deduced about the possible future transformation of the ethnic spatial structure model.

Figure 6: Outline of the study area's ethnic spatial structure I.

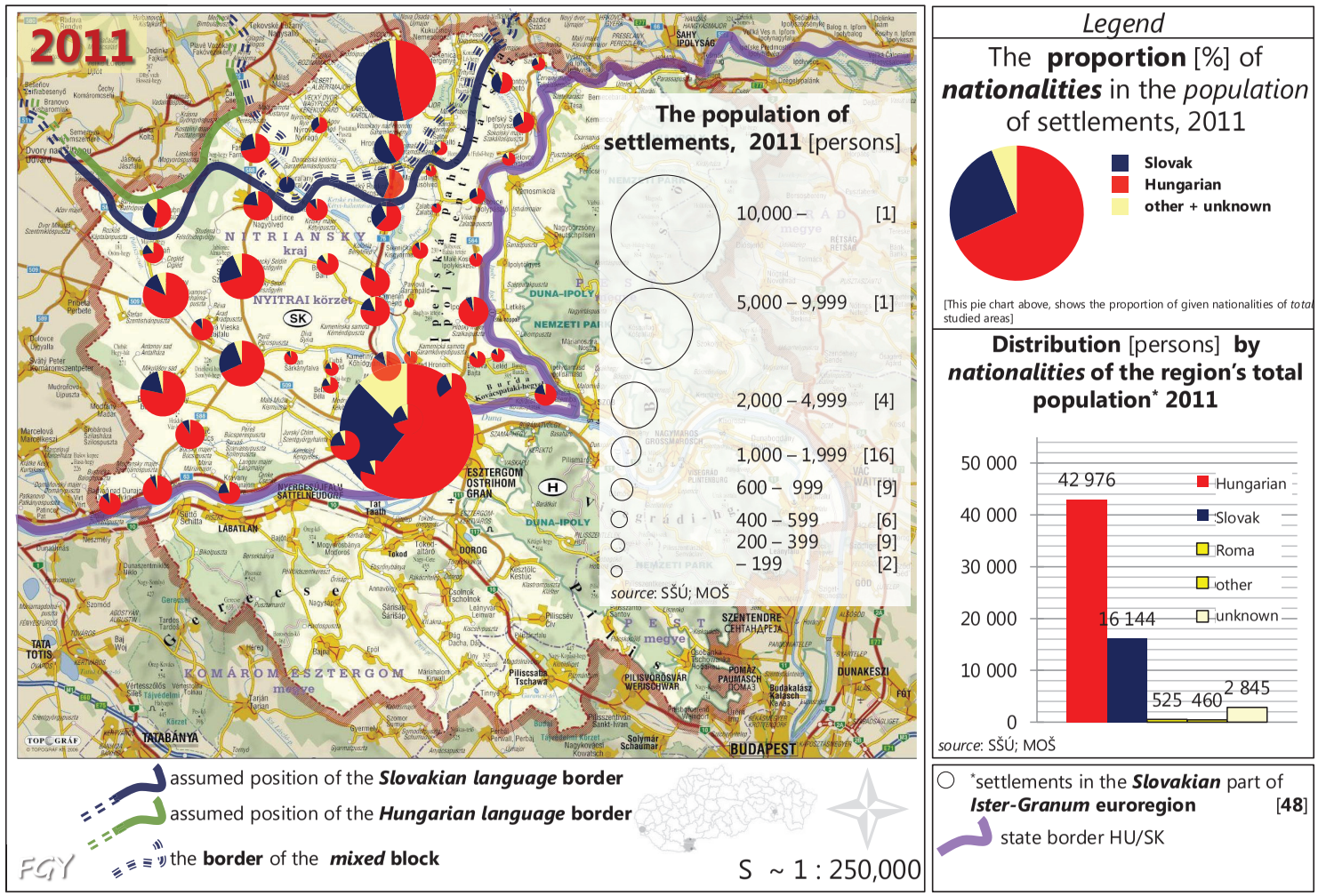


Figure 7: Outline of the study area's ethnic spatial structure II. Possible changes

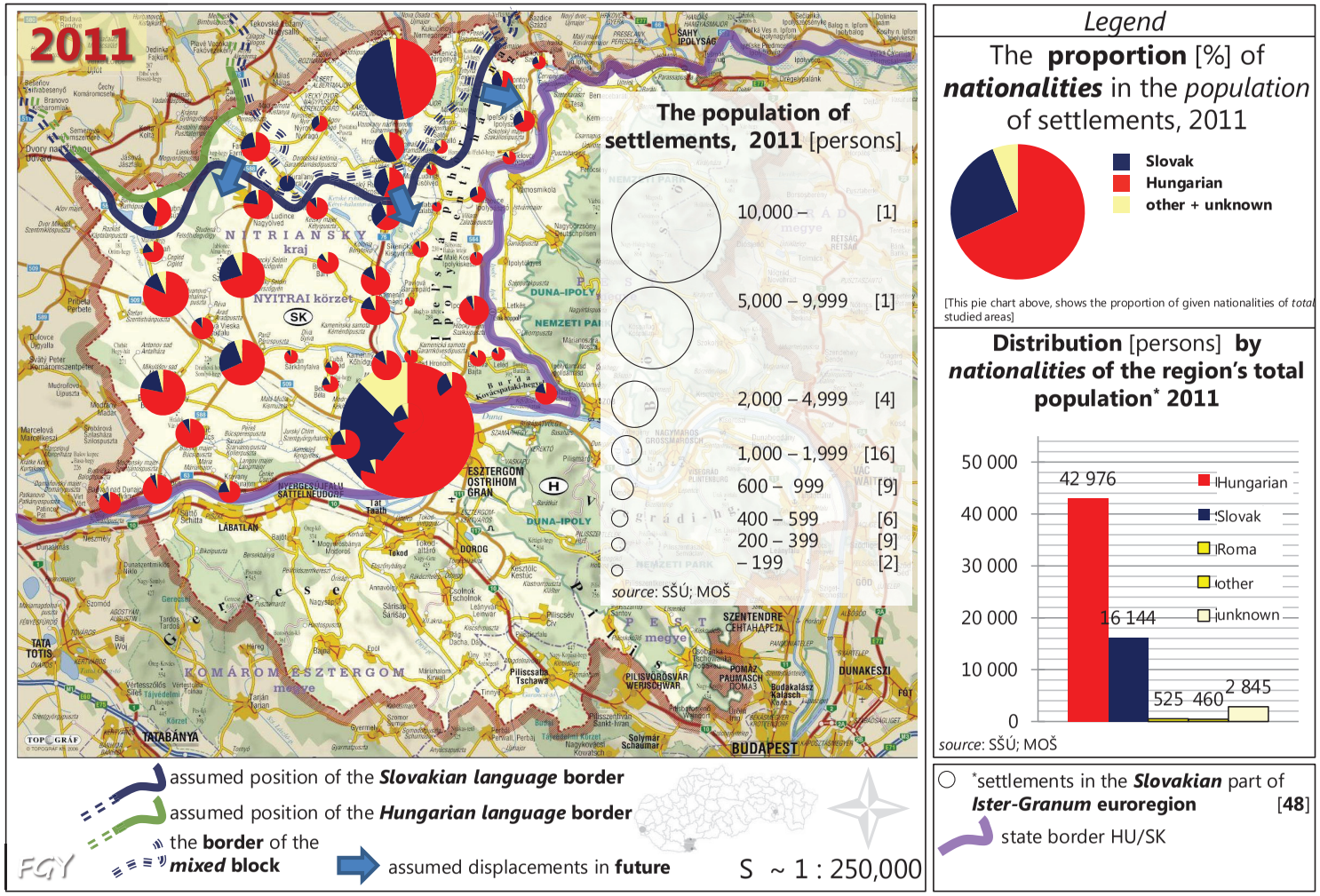
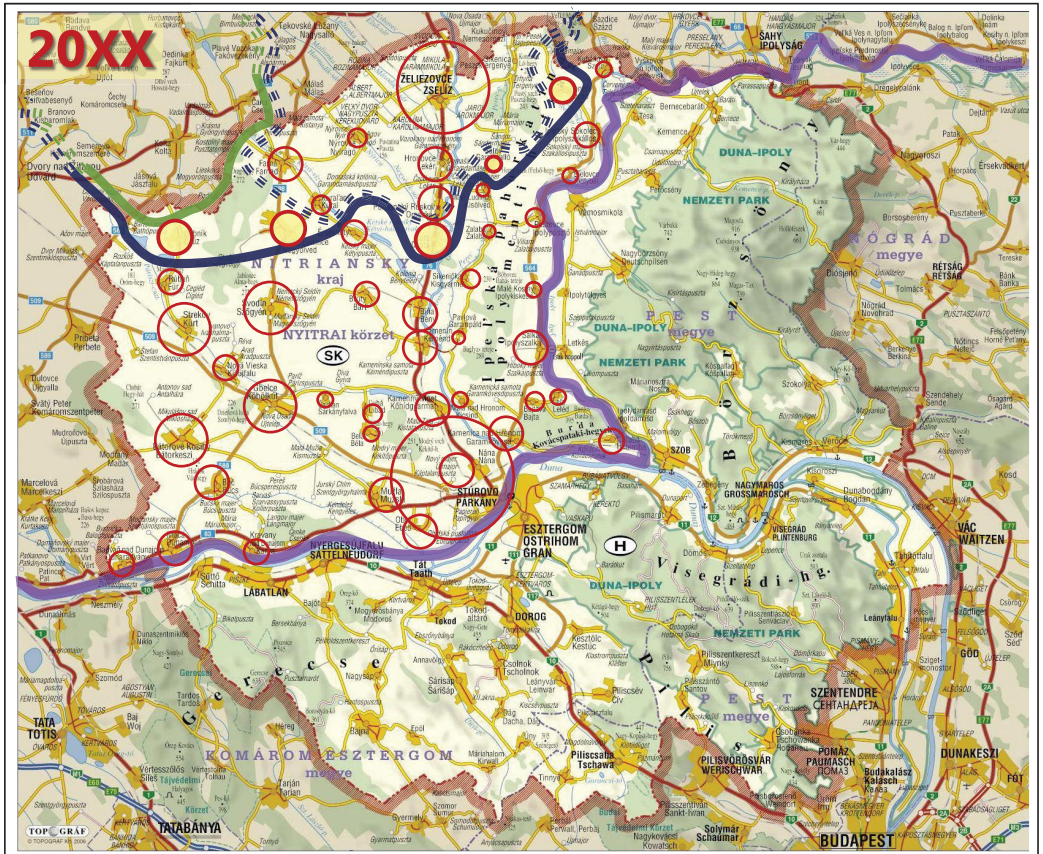


Figure 8: Outline of the study area's ethnic spatial structure III. Conclusion



Using the map of **TOPOGRÁF** Ltd.

FGY

S ~ 1 : 250,000

Legend

The population of settlements, 2011 [persons]

10,000 –	[1]
5,000 – 9,999	[1]
2,000 – 4,999	[4]
1,000 – 1,999	[16]
600 – 999	[9]
400 – 599	[6]
200 – 399	[9]
– 199	[2]

ource: SŠÚ; MOŠ

possible position of the ***Slovakian language* border**

possible position of the ***Hungarian language* border**

the border of the ***mixed* block**

settlements located *on* the language borders

settlements in the ***Slovakian*** part of ***Ister-Granum* euroregion** [**48**]

state border HU/SK

Figure 7 illustrates those sections of the Hungarian-Slovak language border which seem to be the most variable ones based on conjectured spatial structure unit. The conjecture is based on the changing patterns of the ethnic distribution of settlements (see Table 8), if one takes into account the spatial position of the settlements which are the most involved and which have the most fluid direction.

Figure 7 shows that the language border may generate further shifts and changes in the future. That means that even in the case of an unaltered demographic and ethnic distribution, the Slovak language border can advance more towards the south, along the axis of the river Hron.

The visible ethnic process and the expansion of the mixed block can be interpreted in the following way: the local ethnic Slovak groups and their energetic increase may push the language border to the south. This direction can be complemented with a shift towards the southwest and southeast. In the case of the latter, important changes are visible around Dubník: if Farná, currently located within the Hungarian language zone, continues its proportional ethnic loss, the settlement may be included in the ethnically mixed block. If this happens, Dubník will be included in the mixed language and ethnic block, too. Subsequently, the border of the Hungarian language zone would be relocated into the area of Veľké Ludince. These processes and ethnic shifts may support the expansion of the mixed block, which is visible along the Hron area, towards the Slovak language islands that are located within the District of Komárno. The expansion of this mixed ethnic block in the long run could divide the existing Hungarian block within the estuary of the Váh and Hron rivers.

In the area of Lontov, the southeast shift may practically push the language border into the immediate vicinity of the Hungarian-Slovak state border. This expansion of the language border may cause that the Hungarian block near to Štúrovo and the Hungarian areas of the Ipeľ valley and of the Hont are separated in long-term.

There is no need to make any comments on Figure 8 which models the consequences of the above detailed possible changes. It is obvious that despite the reconstruction of the Mária Valéria bridge and despite all its advantageous effects, the observed ethnic and demographic processes do not suggest an *encouraging* future for the Hungarian ethnic groups.

3.2 Evaluation of the research hypotheses

The initial point of the hypothesis (within a given time and spatial frame) was that the reconstructed Danube Bridge allows cooperation between peripheral communities and inhabitants that were strictly closed-off because of non-permeability of borders and because of the destructed Bridge, hence assuring an appropriate fulfilment and exploitation of potentials through the implementation of *cross-border* cooperation and relationship building.

A. According to the given hypothesis, this cooperation-building should strengthen the local communities at all events. Subsequently, it may strengthen the Hungarian local communities, which are in minority position on national level, but they have a profound influence on everyday development. The hypothesis would be demonstrated by *bringing the quantitative and proportional decrease to a halt or even triggering an increase* of the ethnic Hungarian population.

The study highlighted that the *weakening* of all these local ethnic communities continued: there is no sign at all that the ethnic Hungarian distribution would be strengthening, what is more, there is an identifiable and explicit loss in numbers and in proportions, too. Simply, a significant and noticeable momentum of their increase could not be identified.

B. Part of the hypothesis was proven right, claiming that in two peaceful decades when no significant external intervention was experienced, profound changes have taken place *fundamentally affecting the very foundations* of the ethnic structure, which was formed and stabilized after the Second World War.

The processes which influence and determine the number of ethnic groups are pointing in one direction; although, the weakening of the Hungarian communities is extensive in such a way that it could question the validity of the spatial structure model developed more than 50 years ago. The analysis helps outline some predictions about possible future changes. To be specific, the shift of the Slovak language border towards the state border seems to be an irremeable process. The wedge-shape mixed block that developed in the Tekov (formerly: Bars) region after the Second World War further expanded itself towards the southern, southeast and southwestern direction. Its Slovak character will be further strengthened, and its Hungarian ethnic group will be weakened. The Slovak language border near the bend of the Ipeľ/Ipoly river, around Šahy,

will probably reach the current Slovak-Hungarian state border by the end of the first quarter of this century.

C. The last three decades were identified as the period of a slowly, but surely advancing *assimilation* process.

Regarding the quantitative increase in the size of the Slovak ethnic group, this hypothesis was proved completely right. The formation of the ethnic Slovak groups, their slow, but clear and steady increase is a fact that cannot be contested. This process is explicitly present as a natural necessity in every settlement of the study area. Alterations, generated by this process, have not led to tangible and obvious changes yet, but the *character* of the spatial structure has already been shifted. If the described process continues its push, we will be on the verge of structural changes.

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