SOME ASPECTS OF DEMOGRAPHIC CONSEQUENCES OF THE BREAKUP OF FORMER YUGOSLAVIA

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INTRODUCTION

The disintegration of former Yugoslavia can be seen as one of the major political geographical changes in post-bipolar Europe. Civil war, the formation of short-lived statelets, rapid and turbulent changes of borders, mass migration and large scale devastation characterized the process as a result of which seven successor states had emerged by the first decade of the 21st century.

We consider one of the major consequences of the above mentioned 'political geographical transition' to be demographic. Mass migration was only one (quantitative) element of this change, which was accompanied by a more worrisome phenomenon: ethnic homogenization. This latter we take to be the qualitative element of the demographic changes occurring in the region. Scholars who investigate the history, society and politics of the fall of Yugoslavia agree in the presence of the above phenomena, but there is still a dearth of measurement or objective comparison of them in the specialist literature. Our objective is to present the results of a mathematical formula which we think to be useful in measuring such changes. We also aim to review and analyze the impacts of the breakup of Yugoslavia on individual settlements, primarily from the aspects listed below:

- Demographic alteration, whether the population increased or decreased during the examined period and if such change had any regularity
- Changes in the ethnic composition, specifically if there is any regularity in the alterations.

APPLIED METHODS

Our primary sources were the data from the 1991 and 'around 2000'[1] censuses and the estimates of the national statistical institutes and those of international organizations present in the region. In the case of the census it has to be noted that the method by which the 1991 census was carried out differed from that of around 2000. Thus the calculations based on these numbers cannot be considered fully accurate, still, they prove to be a reliable source for comparison since they reflect the tendencies, the directions and the volume of the changes.

Further primary sources are the analysis and reports run by various international organizations and Think Tanks (specialized organizations of the UN, OSCE, International War and Peace Reporting, International Crisis Group, Balkan Investigative Reporting Network, Bosnia Institute, etc.), the EU's reports on the region, its security, integration and the documents of the affected countries on regional development. The fieldwork we conducted in the target region also proved essential in our work. Our primary tool was borrowed from mathematical statistics.

As we have stated above, one of the most significant impacts of the 'political geographical changes' of the region is the changes in ethnic content; the previous mosaic structures ceasing to exist and the homogenization of ethnic spaces and cities. Since the ethnic groups differ from region to region we consider it insufficient to rely on the approach of merely describing the migration of ethnic groups by identifying both old and new locations and establishing whether they formed minorities or majorities in the new territories. We led the examination based on the so-called diversity index, since almost all regions in the analysis are affected by homogenous tendencies in which all ethnic groups are involved. The so-called Simpson diversity index, originally coming from the field of biology and measuring biodiversity in an ecosystem, later being applied to geography in Hungary by Péter Bajmócy, shows the likelihood of a member in a community belonging to a given ethnic group meeting other members of the same or different ethnic groups (Bajmócy P. 2004). Applying the following mathematical formula we arrive at values between 0 and 1, where 0 indicates a completely homogenous population while 1 is a community where everyone is of different ethnicity.

[1] Serbia 2002, Macedonia 2002, Croatia 2001, Montenegro 2003, N.B. There were no censuses after 1991 in Bosnia-Herzegovina and Kosovo. Data on these areas are retrieved from estimations of national statistical offices and international organizations (Alfaro 2000, OSCE 2005-2006).

$$EDI = \frac{L*(L-1)/2 - \sum_{i=1}^{n} e_i*(e_i-1)/2}{L*(L-1)/2}$$, where

L: a population of settlement (općina)

e_1, e_2,….e_n: number of persons belonging to the ethnic groups

EDI: ethnic diversity index

Comparisons of diversity indices of the individual states lead to false results due to the fact that the censuses of 1991 and 'around 2000' do not treat the same number of ethnic groups. However, these censuses did contain the same ethnic groups in relation to states regarding the two censuses, and so we can compare the diversity indices and the extent of changes at state level between the two points of time, which can also be carried out at settlement level. In other words, it is not only the diversity index (EDI) but alterations in it ($\Delta EDI=EDI_{1991}-EDI_{2001}$) which are our most important measurements in evaluating the ethnic changes of settlements.

THE DEMOGRAPHIC IMPACT OF YUGOSLAVIA'S BREAKUP

Changes within population

We consider the changes of population in numbers the most important demographical alteration of the breakup. The Wars of Yugoslav Succession have resulted in the greatest European population movement since WWII. In the war-affected regions the population declined (the vast majority of Bosnian regions, Krajinas, Slavonia) while on the other hand the population on some parts of the 'peaceful' (not directly affected by extensive armed conflict) regions increased due to the mass inflows of refugees.

In proportion, the most significant decline was that of Croatian Krajinas due to the expelled Serbian population only partially being replaced by Croatian settlers. The population in Central and Eastern Slavonia decreased as well but to a lesser extent, because of the peaceful return of Eastern Slavonia (Erdut Agreement, 1998) and of larger-scale Croatian settlement induced by the more favorable natural and settlement conditions.

In Bosnia-Herzegovina the regions to experience declines in population were mainly as follow: settlements in Central Bosnia, the Bosnian Krajinas, settlements along the Drina and the area known as the Posavina corridor. The Serb, Bosniak and

Croat ethnic regions adjoin the Central Bosnian settlements, meaning that maximum ethnic diversity presentes not only two- but three-sided struggles.

Table 1: Municipalities with the highest absolute and relative population decline, 1991-2004.

City (općina)	persons	City (općina)	Rate of decline
Sarajevo metropolitan area (BiH)	-123 162	Donji Lapac (Hr)	-76,62%
Peć (Kos)	-45 943	Bos. Grahovo (BiH)	-70,03%
Belgrade metropolitan area (Sr)	-41 610	Dvor (Hr)	-60,73%
Vukovar (Hr)	-21 346	Glamoč (BiH)	-59,90%
Knin (Hr)	-20 655	Obrovac (Hr)	-58,65%
Zavidovići (BiH)	-20 461	Kupres (BiH)	-58,57%
Maglaj (BiH)	-19 744	Vrginmost (Gvozd) (Hr)	-57,55%
Jajce (BiH)	-19 246	Benkovac (Hr)	-57,42%
Travnik (BiH)	-19 033	Glina (Hr)	-57,00%
Benkovac (Hr)	-18 973	Novo Brdo (Kos)	-56,74%
Zenica (BiH)	-17 082	Gračac (Hr)	-54,70%
Osijek (Hr)	-16 975	Vareš (BiH)	-54,33%
Zadar (Hr)	-16 949	Knin (Hr)	-48,93%
Kotor Varoš (BiH)	-16 740	Bos. Petrovac (BiH)	-47,23%
Negotin (SR)	-16 130	Kotor Varoš (BiH)	-45,65%

Source: Own calculations from data from statistical institutions

However, the population in the third region where serious armed clashes took place did not decline. During early 1991 and early 2000 the most significant population increase in the post-Yugoslav region can be found in Kosovo, with only a few settlements as exceptions. Kosovo is an administrative entity where the figures (even in the census of 1991) were only estimated or else politically influenced, thereby providing unreliable data for population changes. That said, Albanian's highest natural reproductive index within Europe should also be taken into consideration.

The picture for Serbia is an even more complex mosaic; generally speaking, the population is declining in the eastern and southern municipalities while the cities and the area of Novi Sad are experiencing positive changes even if the Belgrade agglomeration is suffering from significant losses.

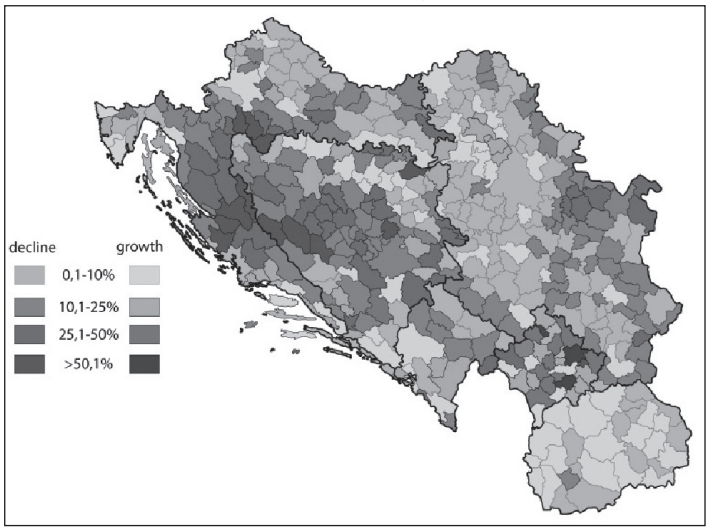
We cannot make such strict distinctions for Macedonia FYR. There different municipalities are experiencing either increasing or decreasing populations, but unlike in the case of the other succession states no sharp contrasts can be detected.

While the highland areas are declining demographically, unsurprisingly the areas with Albanian inhabitants show positive tendencies.

Besides the above-mentioned southern part of Vojvodina the cities and the urban areas (Pančevo Čačak, Niš, Vranje, Novi Pazar, Sombor) and coastal zones with high standards of living also demonstrate positive tendencies. In Croatia these positive poles are the Zagreb agglomeration, the coastal area of Istria and the Kvarner Islands, the Split agglomeration and the South Dalmatian towns and cities. In all cases the positive migrational balance is the main reason for the increase, where both the push factor (escaping from hostile territories) and the pull factor (prospect of better living) exist.

The areas in *Bosnia-Herzegovina* which remained safe from armed conflict did not suffer from significant decline in population and also accepted large numbers of refugees from less fortunate areas. Banja Luka and Bijeljina, the western part of the Posavina Flatland, became the most desired targets for the Serbians. The southern rim of the Posavina corridor became a shelter for the Muslim population, the least fierce battles occurring in this area. Herzegovina's eastern settlements grew in number due to Serbian migration and the western ones due to Croatian settlers. The area was not severely impacted by war and pre-war ethnic diversity was smaller; thus, the number of people leaving the area remained low as well.

Figure 1: Population changes of Yugoslav succession states at the settlement level, between 1991 and early 2000.



Source: data and estimates from statistic institutions; cartography: Á. Németh.

Ethnic homogenization

The primary objectives of the war accompanying the breakup of the state were the securing of political independence in the occupied areas, the satisfying of nationalist territorial needs and the homogenization of the possessed and the occupied territories. Since the ethnic composition of the region prior to 1991 was the most diverse in the whole of Europe, the individual national objectives could only be achieved at the expense of other nations (Juhász J. 1997). We do not state that the breakup was a direct consequence of ethnic tensions, nor do we think that ancient ethnic hatreds caused the conflict, but once it broke out the main driving force was ethnic-based territorial power. The mismatch of ethnic and administrative borders and in Bosnia-Herzegovina the lack of ethnically homogenous territories which could have been a base for territorial political formations was the main obstacle to peaceful separation. The change in this situation resulted in ethnic-based conflicts, ethnic cleansing and homogenization.

The fear and the conflict itself forced millions to leave their homes. This forced migration is *undoubtedly of an ethnic nature* and generally, though not in all affected regions, has led to *ethnic homogenization of the area*. As a result, the *multicultural region of the Western Balkans has disappeared, just as have the ethnic mosaic structures of several areas*.

The statistically provable homogenization is detectable not so much over larger territorial units (the Western Balkans, the federal republics) but rather at territorial meso-levels (entities, counties, municipalities) and settlement level, while the ethnic homogeneity of the former state has hardly changed. *The succession states of former Yugoslavia—Slovenia excluded—show a growth of only 0.3% in the homogenization index.*

From evaluating the data we came to the conclusion that it is not primarily the proportion of various ethnicities, *not the region's ethnic diversity that became modified by the war but that the settlement areas of ethnic groups of the region began to become clearly distinguishable*. This is supported by the fact that the ethnic homogenization of the former Yugoslavia can be considered insignificant, but that of the individual succession states and the territorial units within them are considerable.

Table 2: The change of ethnic diversity index of Yugoslav successor states and other subnational territorial formations between 1991 and 2004.

Republic / entity / autonomous area	ΔEDI (pp)
BOSNIA AND HERZEGOVINA	-5
Federation of Bosnia and Herzegovina	-22
Bosnian Serb Republic	-26
CROATIA	-18
MACEDONIA	2
MONTENEGRO	11
SERBIA PRIOR 2008 (Serbia Proper + Vojvodina + Kosovo)	1
SERBIA AFTER 2008 (Serbia Proper + Vojvodina)	-5
SERBIA PROPER	-4
KOSOVO	-13
VOJVODINA	-9
YUGOSLAVIA (EXCLUDING SLOVENIA)	-0,3

Source: statistic institutions

Using the ethnic diversity index, the Yugoslav successor states can be grouped into two categories; the change in the ethnic diversity is either only *minor*, easily supported by natural processes such as assimilation or the cessation of "Yugoslav" as a category, or *considerable*, the result of significant homogenization.

The ethnic homogenization of the population that took place in Croatia and Kosovo was due to the majority driving out the undesirable minorities by force and overcoming them by demographical means. The expulsion of Serbs from both regions and in Kosovo the faster natural growth of Albans are the main explanation for this.

The population of Serbia has undergone slight homogenization. It has also obtained a collective result deriving from the decrease in the number of people that chose Yugoslav as their ethnic category at the census of 2002, from Serbs driven out of Croatia, Bosnia-Herzegovina and Kosovo settling in Serbia and from the natural process of assimilation of such minorities as Hungarians, Slovaks and other minority groups. Due to counter-homogenetic demographical processes – the higher reproduction rates of Albans (Bujanovac, Preševo) and Bosniaks (Sandžak) and the growing numbers of the Vlachs (Eastern Serbia) all lead towards diversity - the ethnic homogenization of the Serbs was of smaller degree than might have been expected based on the large number of refugees moving to the country.

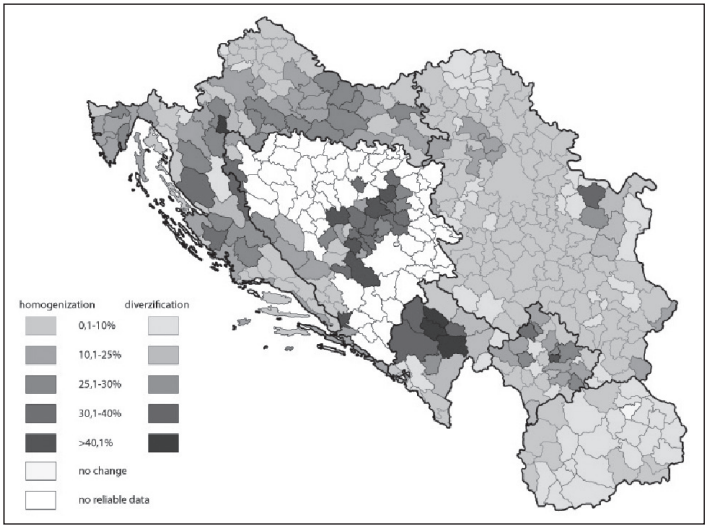
As much research has concluded (Kicošev S.–Kocsis K. 1998), a large proportion of the refugees from the successor states of former Yugoslavia ending up in Serbia

chose to settle down in Vojvodina. This, and the number of Hungarians leaving the territory are visible in the 9% drop rate of the diversity index of Vojvodina. The absolute value of this rate is quite small but *after the war-hit entities, Vojvodina is the former Yugoslav region where the highest rate of homogenization can be observed.*

The ethnic diversity of Macedonia and Montenegro have also increased, but for two different reasons. One quarter of Macedonia's population are Albans, and as a result of their higher reproductive rate and opposition to assimilation the country shows a pattern of growing ethnic diversity emanating from the growing proportion of one minority within the population as whole. In Montenegro the aim for independence had an extremely divisive impact upon society, for the choice of ethnic identity was also a political choice and vice versa. In 1991 the majority of the population identified themselves as Montenegrin but in 2003 those who were for maintaining the federal state called themselves Serbs and the opposing factions Montenegrin.

Despite the fact that no official data on actual ethnic proportion are available for Bosnia-Herzegovina, it can be stated with some assurance that at the state level diversity has changed little, and that the 5% rate is the same as that of Serbia.

Figure 2: Ethnic homogenization of successor states of former Yugoslavia (based on alterations of ethnic diversity index) between 1991 and early 2000.



Source: own calculations from data and estimates of statistic institutions. Cartography: Á Németh

The ethnic structures with slight changes at state level present a larger alteration at subnational levels. Following the Dayton Agreement, an extreme and legitimized version of separation came into existence in Bosnia-Herzegovina. Serbs enjoy a majority in Republika Srpska, while the other two major ethnic groups in the Federation have an absolute majority. Further homogenization can be seen in the cantons, indicating extreme ethnic segregation of the country.

Table 3: Ethnic changes and diversity indices for the cantons of the Federation of Bosnia and Herzegovina, 1991-2004. Statistical institutions

	Ethnic changes (pp)			ΔEDI (pp)
Name of canton	Serbian	Croatian	Bosniak	
Unsko-Sanski	-17,53	-1,02	21,95	-32
Posavski	-9,44	12,27	0,98	-18
Tuzlanski	-9,94	-1,56	20,08	-30
Zeničko-Dobojski	-12,25	-5,38	25,11	-31
Bosansko-Podrinjski	-26,48	-0,06	29,84	-42
Srednjobosanski	-9,23	0,63	14,24	-13
Hercegovačko-Neretvanski	-11,58	9,81	9,18	-14
Zapadno Hercegovački	-0,09	1,97	-1,07	-4
Kanton Sarajevo	-15,94	-0,31	28,79	-30
Kanton 10	-23,26	27,54	-2,21	-24
altogether	-13,1	-0,37	20,52	-22

In analyzing ethnic homogenization at the municipality level we can identify several other types of areas. *Homogenization most extremely affects those municipalities which suffered from armed activities*, e.g. Slavonia, Kosovo, several parts of Croatian and Bosnian Karjinas, Central Bosnia, the majority of the Bosnian Serb Republic (no reliable data available for the whole region). In these areas homogenization is mainly due to the minorities leaving the regions. *In Dalmatia, Istria and Novi Sad the absolute value of the minorities has not declined; there has, however, been a growth in the majority group*. These are the peaceful destination areas for large number of refugees.

Table 4: The top 15 settlements with highest rate of homogenization in the territory of former Yugoslavia (the Bosnian Serb Republic excluded [2]), with the changes of numbers in the top ethnic groups.

	ΔEDI (pp)	Croat	Bosniak	Serb	Yug..	CG	Alb.	roma	other	Total
Zavidovići (BiH)	-53	-7429	1572	-10959	-2703	0	0	0	-942	-20461
Travnik (BiH)	-46	-21893	14629	-7269	-3688	0	0	0	-812	-19033
Kos. Polje (Kos)	-45	-37	-1675	-5107	-65	-898	16626	-2996	-672	5127
Konjic (BiH)	-44	-9506	3468	-5763	-1379	0	0	0	-447	-13627
Fojnica (BiH)	-43	-5806	2212	-98	-396	0	0	0	-1028	-5116
Lukavac (BiH)	-41	-609	11813	-11585	-3384	0	0	0	-1087	-4852
Čapljina (BiH)	-40	2187	-5767	-3510	-1018	0	0	0	-342	-8450
Z. Potok (Kos)	-40	-1	0	7749	-5	-26	-4711	0	-11	2995
Busovača (BiH)	-39	1332	-7726	-374	-505	0	0	0	-159	-7432
Tešanj (BiH)	-39	-8237	12680	-2743	-1038	0	0	0	-379	283
Jablanica (BiH)	-39	-2063	3611	-387	-573	0	0	0	-178	410
Kladanj (BiH)	-36	-6	3710	-3667	-272	0	0	0	-14	-249
Benkovac (Hr)	-36	-474	-26	-18142	-165	1	-18	0	-161	-18973
Olovo (BiH)	-34	-344	-17	-3154	-282	0	0	0	-100	-3897
Banovići (BiH)	-34	24	8316	-4021	-1925	0	0	0	17	2411

Source: statistic institutions

In contrast, in areas where the absolute majority was not the state majority, the change in ethnic diversity showed an increase. Such are the core territories of the Croatian and Bosnian Krajinas, where the Serb population was 90% of the whole ante bellum and during the war neither did all of them flee nor did there arrive large numbers of Croatian refugees.

Vojvodina's settlements with Hungarian (Subotica, Kanjiža, Senta, Čoka, Bačka Topola, Bečej, Mali Iđos) and Slovakian (Bački Petrovac) majorities are also characterized by diversification, this time resulting from a decreasing population not because of the war but as a collective outcome of Serbs from the Krajinas settling here and of the assimilation of the majorities (Hungarians and Slovaks) and their moving into Hungary and Slovakia. Though the Serbs settling among the Hungarians strengthen the diversity at the local level, the same phenomenon seen at the Vojvodina or Serbia level demonstrates ethnic homogenization. Further diversification is visible for reasons stated previously in the municipality of Montenegro. The East Serbian diversification is the result of the strengthening identity of the Vlach ethnicity.

[2] Not even officially estimated data can be found in connection to RS, unofficial estimate figures are dealt with due foresight.

Table 5: Top 15 settlements suffered highest diversification with changes of numbers in the top ethnic groups.

	ΔEDI (pp)	Croat	Bosniak	Serb	CG	roma	Yug.	Other	Total
Vojnić (Hr)	43	1882	1	-4673	3	0	-131	220	-2702
Šavnik (CG)	43	1	-4	1224	-2082	0	-16	127	-749
Kolašin (CG)	41	-4	-22	3966	-5304	0	-114	340	-1147
Žabljak (CG)	40	1	0	1776	-2681	0	-47	254	-696
Mojkovac (CG)	39	-3	-33	3600	-4457	0	-114	320	-708
Plužine (CG)	37	-3	-17	2219	-3404	0	-20	261	-968
Donji Lapac (Hr)	35	431	-32	-6457	-8	0	-64	-15	-6160
Kučevo (Sr)	32	-206	-7	-11299	-55	-23	-262	5064	-6841
Nikšić (CG)	31	4	-1357	15875	-18842	335	-1075	5603	461
Danilovgrad (CG)	28	8	-62	3345	-1893	5	-227	793	1951
B. Grahovo (BiH)	28	387	-12	-6047	0	0	-128	-15	-5815
Knin (Hr)	27	10167	-37	-30289	14	0	-508	-33	-20655
Dvor (Hr)	26	553	-16	-9033	-14	8	-322	-61	-8879
Žagubica (Sr)	24	-6	-3	-5393	-7	-7	-102	2577	-2954
Gračac (Hr)	17	1698	-6	-7490	-11	0	-133	-111	-6061

Source: statistic institutions

CONCLUSIONS

The region's population has been significantly restructured due to the changes in the political geography

The most significant modifications can be seen in the demographical changes which are also the hardest to reverse. The region's demographical map and so the human factor influencing regional processes were massively altered by forced urbanization and certain areas becoming demographically unpopulated after changes in the locations of the population.

Based on the alterations in the numbers of the population it can be declared that the armed conflict fundamentally predestined the directions of the changes, though not in every case. In large parts of Slavonia and Bosnia-Herzegovina the population, as can be expected in war, decreased by as much as a loss of half or two thirds of ante bellum population. Certain parts of Vojvodina, the Croatian coastal areas, the Sava regions of Bosnia (i.e. territories preserved from armed assaults) show an increase, mainly due to refugee settlement in these zones. The changes in the municipalities of Kosovo are however atypical: here, despite the war, a significant increase can be seen.

Regularities can also be identified based on settlement types. In general, but especially in regions hit by war, the population growth is more significant in the cities and is less so in the countryside, just as in Bosnia-Herzegovina.

The ethnic changes due to the conflict were of differing degree on the various administrative levels

In the case of ethnic homogenization we find it important to outline the regular changes in the extent of homogenization per territorial levels. The maximum degree of homogenization from the level of former Yugoslavia through meso-levels to settlement level has increased, from which we can conclude that this is a process that can be apprehended typically at the settlement level and is primarily the outcome of ethnic changes *within* the region. *The ethnic diversity of the Post Yugoslav region changed very little; however, there was hardly any settlement where the ethnic composition did not change.*

The cities of Bosnia-Herzegovina, Slavonia and Kosovo stand out from all the settlements that suffered from armed assaults and homogenization. In these instances the changes in the ethnic structures derived from genocide and escaping from and settling in the given areas. Homogenization is also traceable for settlements in areas not impacted by war, e.g. Vojvodina and the coastal zones of Croatia. That of Zagreb, as an area already containing a Serb/Croat majority, is due to further settlement by refugees. On the other hand, in relation to those settlements in Vojvodina with Hungarian majorities (in the NE along river Tisza) just as in the case of the cities inhabited by Croatian and Bosniak Krajinas and with Serb majorities, diversification was strengthened by incoming minorities and leaving majorities.

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