Ethnic maps as instruments of nation-building on the Balkans (1900-1914). *

Introduction

One of the best instruments for the visualisation of the unified and combined geographical space, the political niche and the different spheres of identity is ethnic mapping. Ethnic maps are special manifestations of the space, and represent the way of thinking of a group about itself and the surrounding communities. Nevertheless ethnic mapping raises many methodological questions. The present study is to enlighten the problems of (I) the interpretation or reliability of raw data and (II) the methods of visualisation. An improper selection of data and visualization methods may easily distort results, as it is described and explained on the following pages. Although ethnic mapping can contribute to the strengthening of a nation’s self-consciousness, thus to the realisation of national dreams, it is usually not impartial, and often serves political interests or exerted to political pressure (III).

The following study focuses on the above mentioned problems, i.e. data selection and visualisation techniques on the example of some new maps found at Haus- Hof- und Staatsarchiv in Vienna, that were used in the Macedonian reform movement after the Mürzsteg convention in 1903. The authors’ idea to make maps – that were originally based on different data sources and created by different techniques (patch-maps and pie-chart maps) - comparable required the selection of a reliable basemap (as basis of comparison) and the redrawing-rescaling of existing maps using GIS-aided techniques. In this way a series of maps were created either to illustrate the ethnic heterogeneity in the region and the temporal-spatial changes over the decades or to illustrate the problems of data-interpretation that different sources can cause. Using the data of the Austro-Hungarian consul Kral, brand new maps were created based on the Austrian concept on ethnic identity (using a classification that can be traced back to Sax, 1877) with pie-chart technique.

(I) Data and their interpretation

When creating an ethnic map one should be aware of the fact, that (1) data on the Balkans are contradictory, (2) identity is a complex phenomenon, (3) the numerous changes throughout the 19th century (as a result of wars and forced migration) made the comparison of data and maps difficult (even the selection of a reliable source serving as a basis for comparison is disputable), (4) identity of individuals is unconsolidated in the case of young nations.

(1) Reliability of raw data. Beyond technical obstacles (like the changing borders of territorial units, that make comparative approach difficult) the lack of data can be another problem. Turkish population censuses are not reliable prior to 1906, since these focus on religious issues regardless of language, nationality, etc. as their main purpose was to estimate the taxable population. Some scientists say that the proportion of Christians is overestimated in these conscriptions as they were more important from the aspect of taxability, and Moslems were often omitted from these documents. Others say, that from
the 1860s – after the implementation of compulsory military service for the Moslems – the conscription of Moslems was more reliable, thus they were overrepresented in these documents. Others claim, that prior to the 1860s when the taxation system was changed, Christians tended to live in larger families (zadruga) as the basis of taxation was the household and not the adult person. This means that the number of Christians was underestimated in the conscriptions. An example: according to Teplov’s data 48 thousand Moslems and 90 thousand Christians were living at the seashore of Bulgaria, while the official salname of 1873 puts the former to 55 thousand, the latter only to 26 thousand, which means that official data were more reliable regarding the number of Moslems.\(^1\) Even in 1910 during the last attempt of the Ottoman government to secure peace in Macedonia by implementing a religious reform and a redistribution of ecclesiastic property between exarchists and patriarchists to decrease tensions, the population was conscribed in households and based on religion (millet) (table 1).

Table 1. Religious (ethnic) distribution in the Kostursko kaza among settlements seceded from the Patriarchate after 1903, prior to the redistribution of Christian ecclesiastic property in 1910

<table>
<thead>
<tr>
<th>15. 05. 1910.</th>
<th>Exarchist households</th>
<th>Patriarchist households</th>
<th>Moslem households</th>
<th>total population</th>
<th>year of secession</th>
<th>church</th>
<th>school</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gorjanci</td>
<td>161</td>
<td>170</td>
<td>175</td>
<td>2645</td>
<td>1909</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Kumanichevo</td>
<td>86</td>
<td>24</td>
<td>42</td>
<td>755</td>
<td>1908</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Sničani</td>
<td>58</td>
<td>23</td>
<td>0</td>
<td>420</td>
<td>1903</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Zhelevo</td>
<td>110</td>
<td>110</td>
<td>?</td>
<td>1406</td>
<td></td>
<td>2 (1 Bulgarian)</td>
<td>2</td>
</tr>
</tbody>
</table>

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Table 2. Proportion of Moslems in Rumelia around 1870 according to 2 estimations at vilaiet level

<table>
<thead>
<tr>
<th>Population in thousands</th>
<th>Istanbul</th>
<th>Edirne</th>
<th>Tuna</th>
<th>Sofia</th>
<th>Selanik</th>
<th>Yanya</th>
<th>Manastir</th>
<th>Iskodra</th>
<th>Bosnia</th>
<th>Islands</th>
</tr>
</thead>
<tbody>
<tr>
<td>„Turks“</td>
<td>342</td>
<td>597</td>
<td>945</td>
<td>154</td>
<td>265</td>
<td>430</td>
<td>860</td>
<td>141</td>
<td>520</td>
<td>80</td>
</tr>
<tr>
<td>Karpat %</td>
<td>57</td>
<td>39</td>
<td>45</td>
<td>23</td>
<td>49</td>
<td>36</td>
<td>56</td>
<td>47</td>
<td>40</td>
<td>50</td>
</tr>
<tr>
<td>Totev %</td>
<td>-</td>
<td>37</td>
<td>38</td>
<td>-</td>
<td>-</td>
<td>40</td>
<td>-</td>
<td>33</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>


The comparison of Ottoman (census, 1908), Bulgarian (conscription of households) and Austrian statistics (census of occupied lands, 1916) enlightens, that the interpretation of data (and thus the confines of the Albanian nation) are completely different (see Appendix). Ottomans and Moslems were counted as Albanians based on the Ottoman census in the book of Kruja,\(^2\) and the displacement and expulsion of the population within 8 years also contributed to the changing ethnic pattern (see Austrian census), not to mention the Bulgarian conscription that found Bulgarian majority in many places where Ottomans and Austrians did not.

Table 3. Contradictorius estimations and censuses on the population of Ottoman Rumelia (end of 19th c.)

---


<table>
<thead>
<tr>
<th>Source</th>
<th>Turkish</th>
<th>Bulgarian</th>
<th>Greek</th>
<th>Albanian</th>
<th>Vlach</th>
<th>Jew</th>
<th>Gipsy</th>
<th>Serbs</th>
<th>Altogether</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duke Cherkassky, 1877</td>
<td>516*</td>
<td>872</td>
<td>124</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1771</td>
</tr>
<tr>
<td>Turkish census in Plovdiv sanjak, 1881</td>
<td>185*</td>
<td>500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>774</td>
</tr>
<tr>
<td>Rittich, 1885, St. Petersburg</td>
<td></td>
<td>1121</td>
<td>59</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gaston Routier, 1903</td>
<td></td>
<td>1136</td>
<td>322</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verković, Croatian, 1889</td>
<td>240</td>
<td>1317</td>
<td>222</td>
<td>79</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1949</td>
</tr>
<tr>
<td>G. Weigand - Die Nationalen Bestrebungen der Balkansvölker, 1898</td>
<td>695*</td>
<td>1200</td>
<td>220</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2275</td>
</tr>
<tr>
<td>C. von der Goltz Balkanwirren und ihre grunde, 1904</td>
<td>730*</td>
<td>266</td>
<td>580</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Journal &quot;Le Temps&quot; Paris 1905</td>
<td>410</td>
<td>1200</td>
<td>270</td>
<td>600</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2782 with Kosova and Novi Pazar</td>
</tr>
<tr>
<td>R. von Mach - Der Machtbereich des bulgarischen Exarchats in der Türkei. 1906</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1166</td>
<td>95</td>
<td>6</td>
<td></td>
<td>1334 only Christians</td>
</tr>
<tr>
<td>Amadore Virgilli &quot;La questiona rom rumeliota&quot; 1907</td>
<td>646</td>
<td>341</td>
<td>642</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R. Pelletier, La verite sur la Bulgarie. Paris 1913 és Leon Dominian, New York, 1917</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1172</td>
<td>190</td>
<td>3</td>
<td></td>
<td>1437 only Christians</td>
</tr>
<tr>
<td>Encyclopaedia Britannica, 1911</td>
<td>500</td>
<td>1000+150 pomak</td>
<td>250</td>
<td>120</td>
<td>90</td>
<td>75</td>
<td>50</td>
<td></td>
<td>2200</td>
</tr>
<tr>
<td>Bulgarian estimation (1900)</td>
<td>500</td>
<td>1033</td>
<td>228</td>
<td>128</td>
<td>80</td>
<td>68</td>
<td>54,5</td>
<td>500?</td>
<td>2258</td>
</tr>
<tr>
<td>Serbian estimation (1889)</td>
<td>231</td>
<td>58</td>
<td>201</td>
<td>165</td>
<td>70</td>
<td>66</td>
<td>29</td>
<td>2048</td>
<td>2870</td>
</tr>
<tr>
<td>Greek estimation Deligiannis-government, (based on religion)</td>
<td>634</td>
<td>332</td>
<td>654</td>
<td>-</td>
<td>25</td>
<td>53</td>
<td>9</td>
<td>-</td>
<td>1725</td>
</tr>
<tr>
<td>Turkish (Hilmi pasa, 1904)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>560</td>
<td>650</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turkish (1906, Hilmi pasha)</td>
<td>423</td>
<td>178</td>
<td>259</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13</td>
<td>950</td>
</tr>
<tr>
<td>Turkish (1906)</td>
<td>1145*</td>
<td>626+Pomaks</td>
<td>633</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a</td>
<td>n.a.</td>
<td>0</td>
<td>2300</td>
</tr>
<tr>
<td>Serbian (Spiridon Gopčević)</td>
<td>225</td>
<td>50</td>
<td>222</td>
<td>80</td>
<td>0</td>
<td>?</td>
<td>?</td>
<td>1600-2000</td>
<td>2200 Macedonia and Kosova</td>
</tr>
<tr>
<td>Bulgarian government</td>
<td>132</td>
<td>1038</td>
<td>429</td>
<td>0</td>
<td>0</td>
<td>80</td>
<td>?</td>
<td>0</td>
<td>2871?</td>
</tr>
<tr>
<td>Bulgarian (Vasil Kančov)</td>
<td>495</td>
<td>1178</td>
<td>211</td>
<td>115</td>
<td>0</td>
<td>0</td>
<td>?</td>
<td>0</td>
<td>2000</td>
</tr>
<tr>
<td>Greek (Kleanthes Nikolaides)</td>
<td>620*</td>
<td>200</td>
<td>650</td>
<td>0</td>
<td>50</td>
<td>80</td>
<td></td>
<td>250</td>
<td>1820</td>
</tr>
<tr>
<td>Greek</td>
<td>656</td>
<td>454</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>576</td>
</tr>
</tbody>
</table>
Even conscriptions from the late 19th century are contradictori ous (table 3). There are certain correspondences between the more than 20 estimations cited from the literature and many of these have common roots. Greece considered the subjects of the patriarchate Greeks regardless of their Slavic or Albanian language. Turkish censuses made difference between patriarchists and exarchists, but these are not always equivalent for Serbian and Bulgarian nation, since hundreds of thousand bulgarophil patriarchists did exist in Macedonia. Moslem Albanians, Circassians and Turks were not discerned. Exarchists were considered Bulgarian. The usage of these conscriptions and estimates can lead to contradictori ous results as it is shown by table 3-4.

Table 4. Differences of contemporary estimations at kaza-level (smallest administrative units)

<table>
<thead>
<tr>
<th>kaza</th>
<th>Ottoman, 1902</th>
<th>Kral cca 1900</th>
<th>Branchov, 1905</th>
<th>Ottoman, 1908</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bulgarian</td>
<td>Moslem</td>
<td>Greek and vlach</td>
<td>Bulgarian</td>
</tr>
<tr>
<td>Prilep</td>
<td>35890</td>
<td>14200</td>
<td>1000</td>
<td>46000</td>
</tr>
<tr>
<td>Ohrid</td>
<td>17500</td>
<td>8100</td>
<td>750</td>
<td>24000</td>
</tr>
<tr>
<td>Monastir</td>
<td>30800</td>
<td>24700</td>
<td>30000</td>
<td>71000</td>
</tr>
<tr>
<td>Florina</td>
<td>33000</td>
<td>18000</td>
<td>4000</td>
<td>43500</td>
</tr>
<tr>
<td>Seres</td>
<td>25000</td>
<td>36000</td>
<td>35000</td>
<td>47500</td>
</tr>
<tr>
<td>Drama</td>
<td>4000+11000</td>
<td>33000</td>
<td>8000</td>
<td>11000</td>
</tr>
<tr>
<td>Demirhisar</td>
<td>11100</td>
<td>630</td>
<td>15000</td>
<td>15000</td>
</tr>
<tr>
<td>Kichevo</td>
<td>20000</td>
<td>13500</td>
<td>22000</td>
<td>22000</td>
</tr>
</tbody>
</table>


Even data of estimations and conscriptions relatively close to each other and driven back to kaza level are completely different (table 4). Those who refer to Branchov’s data supress the number of Moslems in their statistics and use his data simply to prove that Bulgarians are outnumbering Greeks, instead of giving correct percentage data.\(^3\) The Ottomans mixed

\(^3\) The Bulgarian point of view is presented by Tsanov based on Branchoff’s statistics: D. M. Brancoff: La Macedoine et la population chretienne. Paris, Librairie Plon et Co, 1905. and Radoslav Andrea Tsanoff: Bulgaria’s case. Reprinted from The
ethnic and religious categories (using the term Moslem, incorporating Moslem Albanians, Ottomans, and Slavs into one group, thus weakening other groups). The Austrian consul, Kral uses the term Exarchists and Patriarchists, which is not equivalent of Bulgarians, Serbs and Greeks respectively, however it is still the most reliable statistics, as he makes difference between Bulgarian, Serb and Greek patriarchists at least at kaza level (table 5). Dozens of thousand of men were missing from Macedonia due to seasonal migration.

Table 5. Parts from the statistics found in Nachlass Kral, HHStA, Wien (Monastir sanjak)

<table>
<thead>
<tr>
<th></th>
<th>Vlahs</th>
<th>Turks</th>
<th>Gypsy</th>
<th>Jew</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moslem Orthodox Exarchists Patriarchists*</td>
<td>23000</td>
<td>5000</td>
<td>148000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monastir 32000</td>
<td>2200</td>
<td>47000</td>
<td>24000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prilep 12000</td>
<td>1800</td>
<td>3500</td>
<td>64600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ohrid 22000</td>
<td>2500</td>
<td>20</td>
<td>55400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Krchova 11500</td>
<td>60</td>
<td>40640</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Florina 6500</td>
<td>2500</td>
<td>500</td>
<td>60120</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*16 thousand Patriarchists are Serbs, the others are Bulgarians

(2) Complexity of the identity. As it can be seen on the above mentioned examples identity is a complex, multi-layered phenomenon – a simple map focusing on only one feature, like religion or language is not suitable for the Balkan conditions (see differences between maps published in the Appendix). It is better to use maps, that take more than one dimension of the nationality into consideration, like Austrian cartographers did so at the end of the 19th century following the first attempt of Sax, who took both language and religion into consideration in 1877. A similar attempt was done by Asbóth, illustrating religious distribution and the proportion of landlords and landless social strata together on a map-series on the example of Bosnia in order to measure the relationship between social status and ethnicity. The map on Macedonia published in the Geographische Runds chau in 1892 also referred to both ethnicity and religion and did not mix the two categories.

Nevertheless, a map showing Bulgarians differs from that of showing orthodox Bulgarians, while a patch map showing Moslems is much more ‘convincing’ than a map showing Turks, Albanians and Pomaks separately (Appendix).

(3) The instability of identity. Beyond its multi-layered complexity identity cannot be considered stable in case of awakening nations. A good example for this is the case of Silistria, which showed Romanian-Turkish majority in 1878, but by 1905 it turned to be Bulgarian (table 6). Such a process can be the result of natural change in minds, can be forced, or can be the result of continuous migration or ethnic replacement. Certain political tendencies were to distort and manipulate the identity appearing in statistics (if these efforts were fruitless on the level of individuals themselves), like the Greeks did in 1913, when they claimed, that large masses of Albanians are Grecophiles (Albanophone Greeks), thus creating a majority over 50% in several district of Southern Albania in 1913 (table 7). Fake statistics are definitely cheaper, than creating schools and modifying minds or replacing the population. However, this phenomenon is not unique: this group also appear on the map

of Sax from 1877 and Greco-Albanians occur in the Austrian map created for the Mürzsteg convention (Appendix).

Table 6. Ethnic composition of town Silistra in 1878 and 1905

<table>
<thead>
<tr>
<th>nationality</th>
<th>1878</th>
<th>1905</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgarian</td>
<td>1500</td>
<td>6100</td>
</tr>
<tr>
<td>Romanian</td>
<td>2500</td>
<td>300</td>
</tr>
<tr>
<td>Turk, Tatar</td>
<td>7000</td>
<td>4300</td>
</tr>
<tr>
<td>Jew, Armenian, Gipsy</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>altogether</td>
<td>11000</td>
<td>12000</td>
</tr>
</tbody>
</table>

Documents diplomatiques, Nr. 84. 18.02. 1913. p. 62.

Table 7. Manipulated Greek statistics on Northern Epiros

<table>
<thead>
<tr>
<th>sanjak and kaza</th>
<th>Hellenes (1000)</th>
<th>Greeks (in 1000)</th>
<th>Moslems (1000)</th>
<th>Allogether (1000)</th>
<th>Greek %</th>
<th>Moslem %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Janina s.</td>
<td>102</td>
<td>4</td>
<td>11.2</td>
<td>10.7</td>
<td>128</td>
<td>88</td>
</tr>
<tr>
<td>Preveza s.</td>
<td>32.7</td>
<td>1.1</td>
<td>0</td>
<td>2.7</td>
<td>36</td>
<td>92</td>
</tr>
<tr>
<td>Goumenitza s.</td>
<td>28.6</td>
<td>11.6</td>
<td>0.1</td>
<td>34.4</td>
<td>74.8</td>
<td>56</td>
</tr>
<tr>
<td>Argyrocastro k.</td>
<td>13.1</td>
<td>7.9</td>
<td>0</td>
<td>21</td>
<td>42.1</td>
<td>50</td>
</tr>
<tr>
<td>Delvino k.</td>
<td>12.2</td>
<td>4.1</td>
<td>0</td>
<td>5.3</td>
<td>21.8</td>
<td>75</td>
</tr>
<tr>
<td>Himara k.</td>
<td>3.8</td>
<td>3.3</td>
<td>0</td>
<td>4.7</td>
<td>11.9</td>
<td>60</td>
</tr>
<tr>
<td>Vostino k.</td>
<td>18.6</td>
<td>0</td>
<td>2.3</td>
<td>0.8</td>
<td>21.8</td>
<td>96</td>
</tr>
<tr>
<td>Tepeleni k.</td>
<td>0</td>
<td>4.3</td>
<td>0</td>
<td>5.8</td>
<td>10.2</td>
<td>44</td>
</tr>
<tr>
<td>Premeti k.</td>
<td>0</td>
<td>7.1</td>
<td>1.6</td>
<td>9.6</td>
<td>18</td>
<td>48</td>
</tr>
<tr>
<td>Altogether</td>
<td>211.5</td>
<td>43.7</td>
<td>15.3</td>
<td>95</td>
<td>385</td>
<td>74</td>
</tr>
<tr>
<td>Korica k.</td>
<td>0</td>
<td>34</td>
<td>1.5</td>
<td>34</td>
<td>69</td>
<td>51</td>
</tr>
<tr>
<td>Colonia k.</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>9.6</td>
<td>15</td>
<td>34</td>
</tr>
<tr>
<td>Starovo k.</td>
<td>0</td>
<td>3.5</td>
<td>0</td>
<td>13.4</td>
<td>13</td>
<td>33</td>
</tr>
</tbody>
</table>

ÖStA, HHStA PA XII. Türkei Liasse XLV/4. 07.01. 1913. zweite Beilage, fol. 64.

Another example on the reclassification of people was also applied by the Greeks in 1913 after they had incorporated Southern Macedonia. The map of the Bulgarian Ivanov in 1913 based on the statistics of the Exarchy enumerated 330 thousand Bulgarians, while the Greek statistics only 170 thousand. The Pomaks and Albanians were incorporated into the category of Moslems in the Greek statistics, while patriarchist Bulgarians were counted as Greeks, putting the number of the latter from 236 thousand to 500 thousand (though still only a relative majority, table 8). Even the Serbian press put the number of Slavs to 260 thousand in Greece. 4

Table 8. Ethnic distribution of Southern (Greek) Macedonia according to different calculations

<table>
<thead>
<tr>
<th>population in 1000</th>
<th>Ivanov, 1913</th>
<th>Amadodi Virgili</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgarian</td>
<td>329</td>
<td>Exarchist Bulgarian</td>
</tr>
<tr>
<td>Turk</td>
<td>314</td>
<td>Moslem</td>
</tr>
<tr>
<td>Greek</td>
<td>236</td>
<td>Orthodox Greek</td>
</tr>
<tr>
<td>Vlach</td>
<td>44</td>
<td>Vlach</td>
</tr>
<tr>
<td>altogether</td>
<td>1042</td>
<td>altogether</td>
</tr>
</tbody>
</table>

(4) Population movements and ethnic mapping: Migration makes comparison of the content of ethnic maps difficult as sometimes even minor changes (expressed in numbers) may occur on patch maps, while larger changes may remain untraceable: i.e. if urban dwellers concentrated to a point or a disseminated minority is affected by the process. In the latter cases the number of migrants may reach dozens of thousand, but the process does not appear on patch maps contrary to pie-chart maps. This leads us also to the question of visualization. Kemal Karpat and Justin McCarthy are on the opinion that population movements influenced the ethnic pattern of Bulgaria decisively between 1853-1912, not to mention the period after the Balkan Wars till 1923. More than 300 thousand Moslems left Bulgaria soon after 1878 (table 9), while many have arrived from Bosnia and settled down in Macedonia. The former is not well observable on maps, as those, who left were often skilled urban dwellers, or inhabitants living in minority, who were underrepresented in case of using patch-maps like Boué, Lejean, Mackenzie-Irby, etc. did. According to Bulgarian estimations, roughly 200 thousand Macedonian Bulgarians lived in Bulgaria prior to the Balkan Wars exerting pressure on everyday diplomacy and further 100 thousand refugees arrived soon after the Balkan Wars. Nevertheless, the relevance of these estimations can be questioned as the statistics serving as a basis for comparison are not reliable. (See point 1).

Table 9. The population of Eastern Rumelia in 1875 and 1878

<table>
<thead>
<tr>
<th>folk</th>
<th>prior to 1876-78</th>
<th>after the war</th>
<th>proportion in 1878 measured to 1875 %</th>
<th>proportion in 1875, %</th>
<th>proportion in 1878, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turk</td>
<td>220000</td>
<td>90000</td>
<td>41</td>
<td>29</td>
<td>15,5</td>
</tr>
<tr>
<td>Pomak</td>
<td>25000</td>
<td>25000</td>
<td>100</td>
<td>3,3</td>
<td>4,3</td>
</tr>
<tr>
<td>Tatar</td>
<td>10000</td>
<td>8000</td>
<td>80</td>
<td>1,3</td>
<td>1,3</td>
</tr>
<tr>
<td>Circassian</td>
<td>10000</td>
<td>0</td>
<td>0</td>
<td>1,3</td>
<td>0</td>
</tr>
<tr>
<td>Gipsy</td>
<td>25000</td>
<td>16000</td>
<td>64</td>
<td>3,3</td>
<td>2,7</td>
</tr>
<tr>
<td>Bulgars</td>
<td>400000</td>
<td>380000</td>
<td>95</td>
<td>52,6</td>
<td>65,5</td>
</tr>
<tr>
<td>Grecophile Bulgars</td>
<td>35000</td>
<td>30000</td>
<td>86</td>
<td>4,6</td>
<td>5,1</td>
</tr>
<tr>
<td>Greek</td>
<td>35000</td>
<td>30000</td>
<td>86</td>
<td>4,6</td>
<td>5,1</td>
</tr>
<tr>
<td>Altogether</td>
<td>760000</td>
<td>580000</td>
<td>76</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Foreign Office, 424/75 (Drummons-Wolff to Salisbury, 26.09.1878.) own calculation

Anyway, the occurrence of new, large patches is rare, either because immigrants tend to settle down in towns or in villages, where they constituted the majority formerly too, or because the instruments of ethnic mapping have developed at such a rate, that sometimes even maps based on similar methods (like of Sax in 1877 and the Austrian in 1900) cannot be compared accurately – not to mention problems of patch maps stemming from different projection systems. In some cases (like the Austrian map of Macedonia from 1892 and from 1900, see Appendix) the patches on maps relatively close to each other look to be the same, but entitled differently – but this leads us to the question of political concepts on ethnic mapping.

(II) Visualization techniques

Beyond manipulation of raw data, visualized data can also distort real ethnic proportions. Patch maps tell us nothing about the population number, density and proportions. Thus a certain population group can easily and misleadingly be considered majority on a territorial unit, while urban dwellers of different origin may exceed them in numbers, but appear on a smaller patch. Furthermore, scarcely populated areas, like mountains with colour fill may also distort ethnic proportions. The main advantage of patch maps is the possibility for the proper delimitation of ethnic boundaries.

Contrary to the above mentioned type, maps using pie charts may represent ethnic proportions properly on a territorial unit, but the delimitation of distinct, homogeneous patches is difficult, and this map-type does not differentiate between sparsely and densely populated areas either. Resolution can cause another problem: larger territorial units (vilaets, sanjaks) are useless, if the goal is to justify partition or to separate communities from each other.

Both types appear on investigated maps serving political aims, either to emphasize the extent of territories inhabited by a nation, or the role of urbanized areas. Pie-chart is used to illustrate ethnic distribution of the population in Bitola vilaiet, while the patch-map of Chekrezi on southern Albania indicates separate settlements as well beyond patches with color fill.

Combined or complex maps also did appear: the Bulgarian population census in 1892 was illustrated on patch maps indicating total number of population as well. The patch maps of Bosnia by Asbóth indicate proportions, and maps on settlement level (either patch or pie chart) did also exist and served as basis for general maps of smaller resolution.

Colours may also be indicative. Ethnic maps on the Balkans did not tend to decrease the territory inhabited by different nations by using illustrative colours to overemphasize the significance of a certain nation. These tendencies appearing in the Hungarian cartography on the so-called ‘carte rouge’ of Pál Teleki (the method itself was proposed first by the albanologist-adventurer-geologist Ferenc Nopcsa), were later applied by German cartography in the Handwörterbuch des Ausland- und Grenzdeutschums, 1933. This map uses the above mentioned combined techniques of patches and pie charts together.

Patches can bind spaces together without real connections (roads). A correct patch map has to indicate routes, main directions of communication, like in the case of Istria by the Austrian Czoernig.

Transient colours (French map of 1918) and cross-hatching (map of Sax, 1877) were often used instead of patches with explicite borders, veiling the uncertainty in statistics and interpretation of identities in the Balkans.

(III) Maps serving political interests

As we have already seen there are many possibilities to manipulate data in order to exaggerate certain tendencies. These are the (1) critiqueless application or partial selection of data, (2) the arbitrary reclassification of raw data, (3) mixing ethnic and religious categories, (4) using colours to overemphasize phenomena, (5) choosing the technic of

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7 Czoernig, K.: Ethnographie der österreichischen Monarchie, 3 Bände, 1855-57.
visualisation fitting best to the purposes, (6) neglecting roads and physical geographical circumstances, thus creating enhanced connectivity of patches.

Beside lack of reliable data, population movements and unstable identities, political pressure – that was abundant from the 1860s, first plans on the Balkan League – also makes data interpretation and ethnic mapping (and its evaluation) difficult. The first explorers, travellers of the Balkans in the 1840s were less influenced by nationalistic movements, but did not have tools and broad knowledge (ethnographic, linguistic, cartographic) to create reliable maps. Therefore these maps are neither precise, nor influenced by the ideas of procurers: the maps reflect the own thoughts of their creators. Being mainly foreigners, they were able to use both censuses (which were unreliable regarding the numbers) and data acquired from the local people. As a result of this, patch maps became dominant partly due to the lack of proper data and partly owing to the field experiences. By the time professional mapping methods have evolved, ethnic geography also became an instrument of foreign policy of Powers or Small states, therefore the reliability of newer maps did not improve, although at first sight these seemed to be more scientific, thus convincing. Shortly, as the knowledge grew (that could have made ethnic mapping more impartial) so did the number of observable phenomena determining identity, and the dependence of geography from policy-makers. Many of the professional geographers or cartographers were unable to check the data used, and many did not wish to correct them at all, because considered it as an instrument for the realisation of nationalistic ideas. Many were merely opportunists, like the Croatian geographer, Spiridon Gopčević, who published pro-Serbian, pro-Greek and pro-Albanian writings as well using the same data and method, or Cvijić, who published 2 completely different patch maps on the Balkans (even the names of the nations did not coincide) within 5 months in order to support growing Serbian aspirations on Macedonia.

The Mürzsteg reform programme after the failure of the Ilinden uprising proposed and initiated a series of reforms in Macedonia in 1903 under the auspice of Powers. Since Austria-Hungary was also involved in this process, our primary goal was to collect some aide-material - like ethnic maps on Ottoman Macedonia - that could support diplomatic activities of that period.

The contribution of Austro-Hungarian scientists to ethnic mapping was not negligible by that time. Ethnic maps of the Balkan peninsula in the 1870s relied on the material of Felix Kanitz beside the data collected by Boué, Reclus, Kiepert, Erben, Lejean, Mackenzie-Irby, etc. The map of Sax used an excellent method of combining (and not substituting!) religious and ethnic data in 1877 in order to illustrate the complexity of local identities. This technique was unique compared even to the above mentioned maps. The method of cross-hatching - adopted after Kiepert - was able to emphasize the obscure situation on the ethnically mixed territories. Ethnic boundaries were more precise than on the earlier maps of i.e. Boué (see the ethnic composition in Epiros, Thrace, Dobrudja on his patch-map). The tradition of this method prevailed: the Austrian map of 1892 on Macedonia repeated its methodology regarding the complexity of identity.  

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9 Ibid.
10 Published in Geographische Rundschau XXI.
Prior to Cvijić western maps did not tend to indicate Macedonian Slavs in Macedonia: Brailsford in 1906 acknowledged their Bulgarian character,\textsuperscript{11} the Encyclopaedia Britannica in 1911 did too. Even early Serbian official maps (Davidović, Dejardin, 1853, Hahn-Zach, 1861)\textsuperscript{12} did not question the Bulgarian character of Macedonian Slavs, calling themselves ‘Bugari’ (denied later by Cvijić – according to him the term simply meant peasant, ‘reayah’). The reason of the change marked by the map of Garašanin on Greater Serbia in the 1860s and by the map of Miloš Milojević\textsuperscript{13} in 1877 was that while prior to 1878 Serbian national aspirations were targeted toward Bosnia, after the occupation of Bosnia Austria-Hungary in a secret treaty accepted the penetration of Serbian propaganda into Macedonia (1881) to compensate his disillusioned ally. This fit to the Austrian plans to secure economic outlet to the Aegean Sea via railway through Belgrade. After the deterioration of Austrian-Bulgarian relations owing to the fall of the Stambolov-government in the mid-1890s, and the secret Serb-Bulgarian agreement on Macedonian propaganda in 1897, not to mention the Russian-Bulgarian military agreement in 1902 (targeted mainly against Romania, that time the ally of Austria-Hungary), Austria-Hungary tried to decrease the Bulgarian influence in Macedonia by denying the Bulgarian character of Macedonia, in order to secure its way to the Aegean and to convince other Powers about the ethnic character of the region. That’s the reason why maps created to support the Mürzsteg process indicated Macedonian Slavs beyond Struma river and not Bulgarians. Cvijić could rely on the tradition of Austrian ethnic mapping when creating his maps on Macedonia.

The above mentioned method of Sax to illustrate both religion and spoken language was also applied on the maps found in ÖStA HHStA\textsuperscript{14} by Krisztián Csaplár-Degovics dated back to the turn of the 19-20th centuries. As the map in 1877 was elaborated on similar basis, it could serve as a basis of comparison regarding ethnic changes (including the Austrian map of Macedonia from 1892 composed for a smaller territory) together with other detailed (kaza-level) numeric data found in Nachlass Kral.\textsuperscript{15} Some of the maps were published by Teodora Toleva in her book in 2012,\textsuperscript{16} but in such a bad resolution, that neither the legend, nor settlement names can be read, thus cannot be compared to other maps. After the death of Toleva, when we decided to reproduce and publish these maps again using GIS to make them comparable with maps of other nations in order to measure ethnic changes, it was recognised that these maps were moved from their original place.

Fortunately in the Kartensammlung aus dem Min. des Äussern, ÖStA, HHStA copies of the maps published by Toleva did exist, and also two more maps on the Vilajet of Bitola were found known as Bulgarian maps from 1899-1901.\textsuperscript{17} The dating of the maps shows, that these were created prior to the Mürzsteg agreement, and after 1878 with the exception of one map. But since the latter uses the same projection system and colours as the ethnic map

\textsuperscript{12} See: „Die Bulgaren in ihren historischen, ethnographischen und politischen Grenzen.”…
\textsuperscript{13} http://en.wikipedia.org/wiki/Milo%C5%A1_Milojevi%C4%87
\textsuperscript{14} ÖStA HHStA, AB XIX, Nachlass Szapáry
\textsuperscript{15} ÖStA, HHStA, AB XIX/84. Nachlass Kral, K2.
\textsuperscript{17} (1) Nationalitätenkarte der Europäischen Türkei cca. 1900.
(3) Religionskarte: Kosovo, Saloniki, Scutari, Janina, Monastir vilaieten. 1877 (???)
(4) Christliche Schulen in Makedonien um 1900 - not identical with that of published in Toleva’s book (see below).
from 1900s does, it seems to be sure that it was created by the same scientific school and since many patches are identical, both maps should be based on the same data from the same period.

Unfortunately we hardly know anything about the origin and metadata of these maps, as the documentation (author, data sources, purpose) is missing in the Kartensammlung (only the maps were preserved). The hypothesis, that these maps are the simple reproduction of Kančov’s research, therefore they are based on Bulgarian sources, is not verified, since (1) some of these Austrian maps accepted the existence of the Macedonian nation (it might have served political goals, to keep Bulgarians away from the Vardar axis and Saloniki important for Austria-Hungary for economic reasons), and (2) maps extended to larger territories that Kanchov investigated (however, the Austrian map of 1892 and that of Kanchov on Macedonia are very similar).

The raw ethnic data found in Nachlass Kral (also published by Toleva, but without control) were organised in kaza-level, sanjak-level and vilayet level appearing in tables. Adding up lines made it sure that kaza-level data needs recalculation and minor corrections. Compared with other maps and population censuses (Gopčević, Kančov, Nikolaides, etc.), this can be a good contribution to the examination of the question of nationality. After having compared the patch maps found in the Kartensammlung and data found in Nachlass Kral, it became evident, the two techniques of visualisation differ and thus could serve different (political) purposes. From methodological aspect of illustration patch-maps are able to show the area covered by a nation, but can distort ethnic proportions as they lack information on population number and density. Thus, certain nations can be over- or underrepresented based on colours (i.e urban-dwellers and those living in the countryside). Therefore, based on the statistical data of Kral on kaza-level two new maps showing the percentage values of different nationalities were created using pie chart-technique proportional with the population number. The two map-types (patch and pie chart) produced different results regarding the ethnic pattern.

To make maps comparable (1) with older maps, (2) with maps of other nations, and (3) to measure correlation between the number of schools established and ethnic proportions we decided to build a GIS-aided database, that enabled us to overlay maps. This process included the georeferencing of data (fitting map-parts together, eliminating distortion, creating a common projection system, legend and reference unit /kazas/ for the maps) in order to obtain good resolution. This was followed by digitising (redrawing entities in Arc View 8.0) and database building (assigning qualitative and quantitative data to patches/kazas as entities), enabling us to carry out an analysis of the map-series from 1877-1903 regarding ethnic changes.

Although the database is still under construction and evaluation, some new maps incorporated to GIS are published here as a preliminary study together with a short general criticism of the ethnic mapping in the 19th century.

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18 ÖStA HHStA, XIX, Nachlass Szapáry, Kt. 3 b
APPENDIX

(1) The ethnographic patch-map of Macedonia and Albania by Sax (1877), redrawn and fit to other maps by Zsolt Bottlik
The ethnographic patch-map of Macedonia and Albania in the HHStA Kartensammlung (Vienna), redrawn and fit to other maps (cca. 1900) by Zsolt Bottlik
The ethnographic pie-chart map of Macedonia and Albania with diagrams at kaza level based on the data found in Nachlass Kral (cca. 1900), redrawn and fit to other maps.
(4) The religious pie-chart map of Macedonia and Albania based on the data found in Nachlass Kral, redrawn and fit to other maps (cca. 1900)
The religious patch map of Macedonia and Albania (1877?), redrawn and fit to other maps.
Christian schools in Macedonia around 1900, redrawn after Toleva
(7) Differences in the interpretation of the ethnic pattern from the same era. The Albanian nation according to the Ottoman census (1908), the Austro-Hungarian census in 1916, and the Bulgarian conscription of households (for the colours, see map 3).

Moslems and Turks are incorporated into the Albanians according to the book of M. Kruja.

Austrian version (see the depopulation and ethnic change in Kosova). Bulgarian: counted from households.