János N. Fodor

nfodor.janos@btk.elte.hu, nfodorj@gmail.com
https://orcid.org/0000-0002-0401-3701
Eötvös Loránd University (ELTE)
Budapest, Hungary

https://doi.org/10.4467/K7446.46/22.23.17275

Hungarian Family Name Typology and the Question of Onomastic Dialects

Abstract

Similar to common words, the spatial division of proper names is a natural by-product of linguistic change. During the process of language change, the influence held by territoriality can be demonstrated (to differing degrees) within the total linguistic system; the existent dialects that emerge as a result of this influence thereby justify the separate examination of linguistic levels. The international study of geonomastics emphasizes the connections and correlations between dialects and proper names. A question still remaining for researchers to answer is whether the territoriality of proper names is merely the result of dialectological properties, or if a deeper process is at work: do names indicate a different level of name dialects? In opposition to its earlier definition, in this case "onomastic dialect" does not refer to one particular name's isogloss, but rather to regional onomastic units. This investigation concluded that territoriality exerts a fundamental influence on the name types found in a given language's surname system. The paper introduces some name typological, regional differences found in the Hungarian name system as analyzed by the Atlas of Historical Surnames in Hungary (AHSH) Project. Analytical measurement methods (Bray-Curtis dissimilarity, clustering) was applied in this investigation. I found that in the Hungarian surname system, regional groups of surname types can be distinguished, which can actually be considered as "surname dialects".

Keywords

onomastic dialect, geonomastics, anthroponomy, surname region, typology, clustering

1. Introduction

This article examines the question of whether a given language's surname system can be separated into regional units, similar to linguistic dialects. To answer this question, it is first necessary to determine what characteristics within the category of surnames will create the basis for analysis. With the aid of the most suitable research method, it will then be possible to experiment with separating regional categories. My paper first presents the possibilities for examining surnames, then analyzes the historical data for Hungarian surnames from the perspective of onomastic dialects (Nicolaisen, 1980).

2. The research aim and related issues

The main question is what we are to examine when attempting to determine the main regional variations and types of a surname system, as opposed to single surnames.

In dialectology, separating different dialects is primarily done based on a set of phonetic and phonological criteria. By establishing the spatial scope of a phoneme system, the rate of phoneme occurrence and characteristic phoneme variants, as well as certain morphological indicators, it is possible to make a distinction between linguistic dialects. In early centuries, the phonological structure of proper names reflected that dialect of the place where the name emerged. It can be stated that a proper name's phonologic structure essentially reflects the dialect peculiar to its place of origin (cf. Scott, 2016, pp. 496, 498; Hough, 2018). This characteristic, however, mainly indicates a given language's regional variants rather than onomastic dialects.[1]

[1] Later, as spelling became codified, proper names attained official forms, or names were changed, the dialect characteristics of natural name material decreased significantly. To a certain extent, historical sources still preserve these dialect qualities.

W. F. H. Nicolaisen (1980) first used the concept and the term of an *onomastic dialect* when discussing the structure of toponymic names. He defined the concept of onomastic dialect by focusing on the lexemes in place names, but also considered functional and morphological aspects. According to Nicolaisen, onomastic dialects are created by a communicational connection between name-givers and are therefore significantly defined by cultural and social background. He also uses the term "onomastic idiolect" to describe an "individual name repertoire" that would be strongly influenced by the community of name-users and name-givers, who form a culturally and socially stratified onomastic dialect area (Nicolaisen, 1980, p. 42).

According to I. Hoffmann, due to the systematic nature of proper names, the system of toponyms of individual settlements does not show any significant differences within linguistically unified, historically and culturally similar areas. However, where these factors diverge, there may also be differences in the name system. Based on this, typological differences arise, so theoretically the name dialects can be separable (Hoffmann, 2007, pp. 39–40). E. Ditrói (2018) has used this theoretical approach to examine the Hungarian place name system. She analyzed what kind of morphological solutions name-givers were likely to employ as a reflection of certain types of motivation (e.g., possession). She applied a kind of statistical method and measurement for investigation of place names in western Hungary.

Although the analyses of some aspects of place names can serve as a basis for investigating proper names (such as when determining the concept of an onomastic dialect and the statistical methods to be used), the disparate characteristics related to types of proper names mean that a different analytical method and different analytical aspects must be developed.

Theoretically speaking, the basis for separating regional groups could also be found in individual surnames themselves. Examples of this kind of lexical research are rare within the field of onomastics.[2] Human genetics builds upon the concept of the *isonym*. Long an aspect of genetic research, analyzing the spatial relations found among the same surnames allows researchers to draw conclusions regarding the territorial particularities of the Y chromosome (Lasker, 1980; 1985; Jobling, 2001; King & Jobling, 2009; Darlu et al., 2012;

[2] One example: Insley (2006) has employed the concept of the onomastic dialect in the analysis of early Germanic and Indo-European personal names.

Ochiai et al., 2021, etc.). In surname studies, isonymic distance measures the rate of dissimilarity among surnames originating from two areas. There are three ways of calculating the isonymic distance: Lasker's distance, Nei's distance and Euclidean distance (cf. Scapoli et al., 2005). "A small isonymic distance between two areas indicates that their surname structures are strongly similar. (…) The matrix of isonymic distances can be used to express the multilateral dissimilarities of surname structures among different areas" (Shi et al., 2018, p. 3).

For the purpose of onomastic dialects, it is important to take note of research that depicts *surname regions* (e.g., Cheshire et al. (2010)'s work on Great Britain, Cheshire et al. (2014)'s work on Japan and Shi et al. (2018)'s work on China), and then compare these areas to territories of dialects. This type of examination has been conducted in connection with France (Scapoli et al., 2005), Holland (Manni et al., 2006), and Spain (Sousa & Ginzo-Villamayor, 2020). One of the peculiarities of isonym-based analysis is that it is mainly founded on surnames that provide a probable indication of ethnic origin, i.e., a genetic connection. This kind of approach excises from the examined name data both those names that occur very commonly and emerge in various locations, independently of one another, as well as those that are rare and only appear once.

One example is the case of the province of Asturias in Northern Spain (Sousa & Ginzo-Villamayor, 2020). In Asturias, the population's pattern of migration from north-to-south took place in four groups beginning in the thirteenth century, after surnames emerged. As a result, a high degree of overlapping can be found between the province's linguistic peculiarities and the regional dispersion of isonyms. In this instance, the phenomenon of migration led to the simultaneous transfer of both the dialect and the extant name material.

The end results garnered by these similar research projects diverged. Although research based on isonyms has found that surname distributions are strongly related to language (Scapoli et al., 2005; Manni et al., 2006), there are those who view these results as not unequivocal evidence of the connections between surname regions and linguistic dialects. For example, Manni et al. (2008) state: "surnames cannot be taken as a proxy for dialect variations" (p. 41). Both surname regions and dialectal areas emerge due to geographical factors, historical migrations, the impact of trade and economy, or as a result of cultural and linguistic isolation (Shi et al., 2018, p. 7), but these have different effects on language change and surname system mostly due to the time factor.

The aforementioned research areas apply statistic-based methods can provide a source of inspiration for onomastic analyses.

3. Materials and methods

3.1. In my opinion, the exploration of onomastic dialects should not be done by means of dialectology or population genetics. Instead, basing this type of analysis in onomastics can be far more effective. To do so, however, the *typological particularities* of a *surname system* must be used as our foundation.

The databases of the Atlas of Historical Surnames in Hungary (AHSH) used for this analysis contain information on surnames from the area of historical (pre-1920) Hungary and are based on data we gathered from early eighteenth-century tax censuses prepared within Hungarian Kingdom and Transylvanian Principality. The 1713–15 database currently contains approx. 200,000 names while the 1720–22 database contains 214,000 pieces of name data.[3]

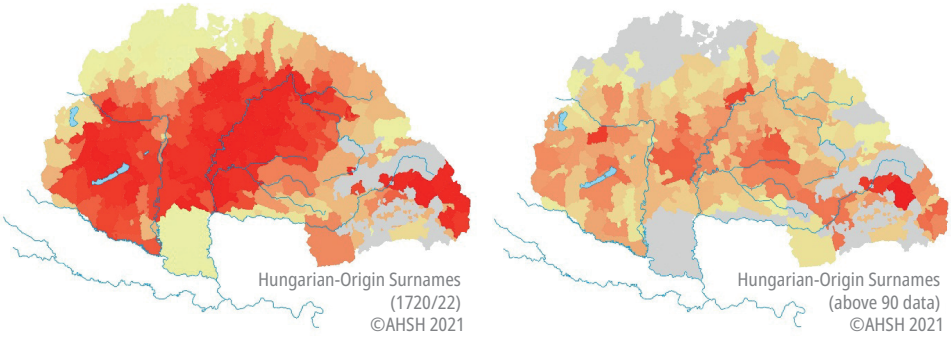


Figure 1. Spatial distribution of Hungarian-origin surnames (left) and surname data above 90 (right) in the Carpathian Basin

Source: own work based on AHSH 1720/22.

[3] According to my knowledge, the AHSH contains the earliest, most complete personal name database connected to the Carpathian Basin at present.

In the case of name system analyses, it is essential to separate names based on languages.[4] Figure 1 illustrates the territorial location of etymons that originated from Hungarian in the Carpathian Basin at the beginning of the 18th century. The data was localized by districts and larger cities (free royal cities). Mainly within the zone of contact, there are some regions where few Hungarian surnames are to be found, thereby making them irrelevant for statistical calculation. The minimum for conducting a statistical analysis was set at 90 pieces of data. The map on the right shows the territorial positions for the **158 administrative units** (districts, cities) that were selected for examination where at least 90 Hungarian surnames can be found.

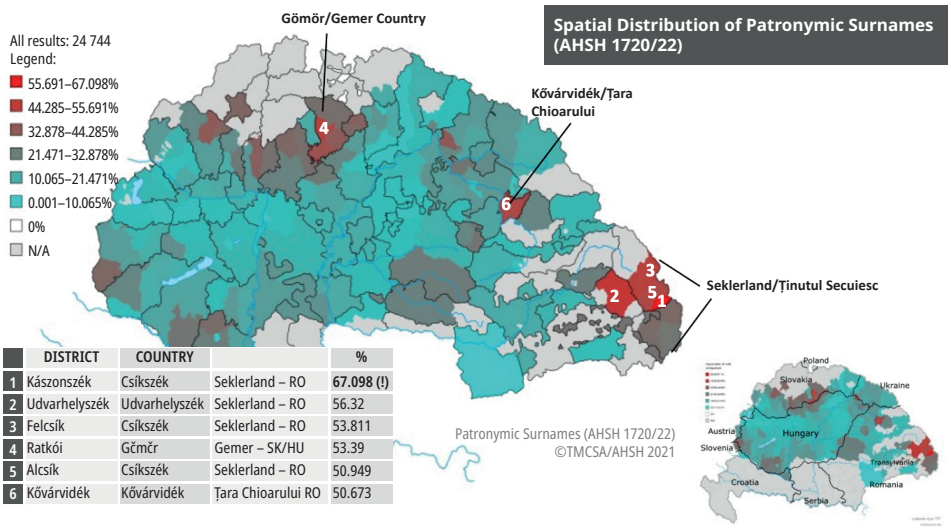
3.2. The dispersion of surname typology was based upon the analysis of the fundamentals of name giving, meaning that the categories that have a role in name giving were applied (referred to as motivations). Surnames are generally categorized into the following four main types: a) local surnames (toponyms), b) occupational surnames (metonyms), c) surnames of relationship (diminutives), and d) nicknames (Barker et al., 2007).[5] The European Surname Typology project distinguishes the following types: a) patronymics, b) occupational names (and titles, dignities), c) nicknames (personal characteristics), and d) names referring to origin (toponymic or ethnic) (Farkas, 2018, p. 29). The Hungarian approach to this categorization, however, differs in a few ways from this. The most important difference regards ethnic surnames: since family names that reflect ethnic origin play an important role in Hungarian name history (cf. Farkas, 2015, p. 131), we usually handle the occurrence for these names separately from toponymic surnames.[6]

[4] The four most common name systems in the Carpathian Basin are: Hungarian, Slavic, German and Romanian.

[5] A similar categorization: a) occupational names (Berufsnamen, noms de métier), b) patronymic names (Rufnamen, noms de baptême), c) nicknames (Übernamen, noms de caractéristiques physiques ou morales), and d) topographic names (Herkunftsnamen and Wohnstättennamen, noms de lieux) (Shokhenmayer 2016, pp. 223–225). According to Parkin (2013), "most surname scholars recognize four main classes of surname: those derived from a location, those derived from a relationship, those derived from an occupation, and those derived from a nickname, but the boundaries between these classes are not always clear" (p. 201).

[6] There is no way to describe the uncertainties of motivational analysis in detail now. I agree with Parkin (2013)'s argument that, despite the uncertainties, it is possible to classify individual surnames. The method of analysis developed by him seems to be applicable in the case of the Hungarian surname material as well (Parkin, 2013, p. 208).

The regional particularities for the main types of surnames can be shown separately on cartograms depicting onomastic geography. In the following, I will focus on those types which originate from patronyms and toponyms.



	DISTRICT	COUNTRY		%
1	Kászonszék	Csíkszék	Seklerland – RO	**67.098 (!)**
2	Udvarhelyszék	Udvarhelyszék	Seklerland – RO	56.32
3	Felcsík	Csíkszék	Seklerland – RO	53.811
4	Ratkói	Gčmčr	Gemer – SK/HU	53.39
5	Alcsík	Csíkszék	Seklerland – RO	50.949
6	Kővárvidék	Kővárvidék	Țara Chioarului RO	50.673

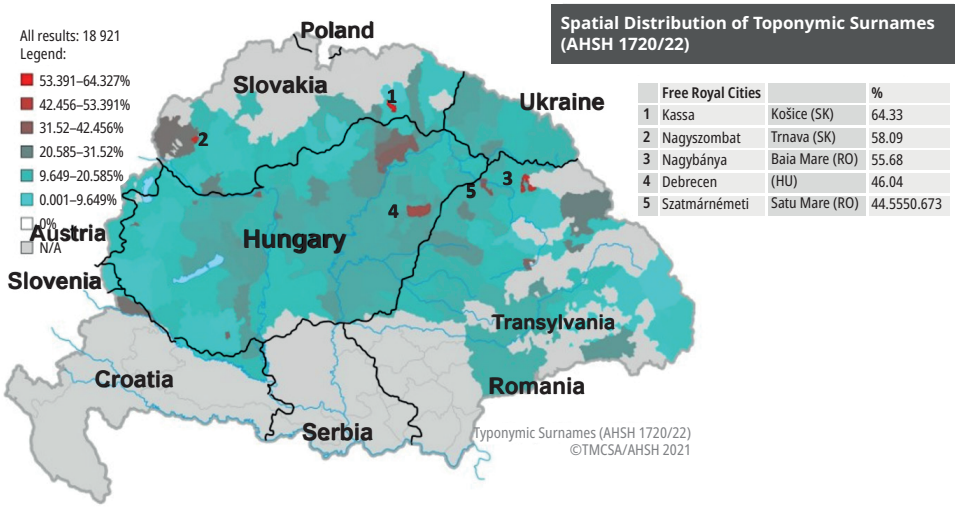
Figure 2. Spatial distribution of Hungarian patronymic surnames and percentages totaling more than 50%

Source: own work based on AHSH 1720/22.

Figure 2 shows the distribution of Hungarian patronymic surnames. The dark red shading clearly indicates the typological similarities between neighboring or certain distant locations. Within the Hungarian name system, the Seklers (today located in Romania) are well-known for a frequency of surnames that arise from patronyms (Farkas 2018, p. 35). When this data is mapped, however, it can be seen that similar proportions are found in other distant places, the region of Gömör County (now in Slovakia and Hungary) and District Kővár (now in Romania). The high rate of patronyms can be explained by the fact that emphasizing familial ties bore a great level of significance for these Hungarian communities.

Figure 3 illustrating toponymic surnames displays a similarly noticeable result. As can be seen, over 40% of names found in five free royal cities (populated by a Hungarian majority at that time) were toponymic in origin. Each

of these cities had been granted privileges in the form of medieval municipal rights. The fact that they offered access to increased rights acted as a considerable effect for those willing to migrate from surrounding or even more distant villages. The family names for those who moved into the cities therefore became the name of their previous residence, even if they had already had a different type of family name before moving.



	Free Royal Cities		%
1	Kassa	Košice (SK)	64.33
2	Nagyszombat	Trnava (SK)	58.09
3	Nagybánya	Baia Mare (RO)	55.68
4	Debrecen	(HU)	46.04
5	Szatmárnémeti	Satu Mare (RO)	44.5550.673

Figure 3. Spatial distribution of Hungarian toponymic surnames

Source: own work based on AHSH 1720/22.

3.3. By mapping certain name types, the regional particularities of Hungarian surname types become readily visible. If, however, we would like to display the correlations – as in how name types relate to one another as well as to their spatial surroundings – then it becomes necessary to apply a statistical method that allows us to investigate complex phenomena. The field of biology has primarily developed the kinds of analytical method that make it possible to compare multiple, simultaneous characteristics among various populations. As was previously mentioned, the human genetic research that employs surname analyses utilizes this kind of an approach.

In my analysis, one of the most well-known methods, the Bray-Curtis dissimilarity (Bray & Curtis, 1957) is applied. In biology and ecology, this

measurement method is used to quantify the dissimilarity between two different sites. The formula for the index of dissimilarity is as follows:

$$BC_{jk} = \frac{\sum_{i=1}^{n} | x_{ij} - x_{ik} |}{\sum_{i=1}^{n} \left(x_{ij} + x_{ik} \right)}$$

"This is a simple index, reflecting the proportion of the total in which the two objects differ" (Podani, 2000, pp. 81–82). The Bray-Curtis dissimilarity is bounded between 0 and 1, where 0 means the two sites have the same composition, and 1 means they have no common features. An example of this calculation method is shown by Table 1 and 2.

Table 1. Input data: percentages of surname types[7]

ID	Locus	County	Nicknames (%)	Patronymic names (%)	Ethnic names (%)	Occupational names (%)	Toponymic names (%)
1	Kolozsvár / Cluj Napoca (RO)	Kolozs	17.3	11.9	5.9	27.6	36.6
2	Nagybánya / Baia Mare (RO)	Szatmár	10.7	9.6	2.2	23.9	56.7
3	Kászonszék (RO)	Seklerland	13.3	67.1	2.1	12.5	5.1
4	Alcsíkszék (RO)	Seklerland	18.5	53.8	6.1	22.1	5.1

Source: own work based on AHSH 1720/22.

Table 2. Results: Bray-Curtis (BC) index

ID	1	2	3	4
1	0	0.17984	0.54966	0.39189
2	0.17984	0	0.60629	0.52371
3	0.54966	0.60629	0	0.15605
4	0.39189	0.52371	0.15605	0

Source: own work based on AHSH 1720/22.

[7] Since the input data is given as a percentage, no standardization is required, areas of different sizes are also comparable.

4. Results

The BC index is the similarity (or dissimilarity) number displaying the correlation between two places for surname types that can be shown in either the form of a table or a heat map. Upon selecting a desired point of research on the heat map, we receive a list of the places that are most likely similar. What is more, the correlations that exist among these places then become visible. On the heat map (Figure 4), the darkest shade depicts the places with the greatest level of similarity, meaning that it connects the places belonging to one "surname dialect".

DISTRICT/FREE ROYAL CITY	COUNTY	LOCUS ID	141	39	140	157	99	34	60	37	142	87	19	85	106	64	148	119	146
Felcsík	**Csíkszék**	**141**	0	0.0369	0.0507	0.0566	0.1017	0.1368	0.1391	0.1407	0.1516	0.1566	0.1568	0.1586	0.1725	0.1778	0.1783	0.1861	0.1884
Ratkói	**Gömör**	**39**	0.0369	0	0.0413	0.0793	0.0644	0.1107	0.1187	0.1153	0.1829	0.1515	0.1177	0.1321	0.1325	0.139	0.1371	0.1524	0.1542
Alcsik	**Csíkszék**	**140**	0.0507	0.0431	0	0.0889	0.0829	0.1162	0.1413	0.1118	0.1728	0.176	0.1382	0.1562	0.1553	0.1583	0.1591	0.167	0.1793
Udvarhelyszék	**Udvarhelyszék**	**157**	0.0566	0.0793	0.0889	0	0.1069	0.1405	0.1439	0.1443	0.1404	0.1483	0.1612	0.1631	0.1768	0.1821	0.1824	0.195	0.1941
Kővárvidék	**Kővárvidék**	**99**	0.1017	0.0644	0.0829	0.1069	0	0.0889	0.0719	0.0969	0.2427	0.1202	0.06	0.0841	0.0857	0.1109	0.0913	0.1356	0.1298
Putnoki	**Gömör**	**34**	0.1368	0.1107	0.1162	0.1405	0.0889	0	0.0851	0.045	0.2834	0.0904	0.0742	0.1108	0.1117	0.05	0.0821	0.0647	0.0913
Selmeci	**Hont**	**60**	0.1391	0.1187	0.1413	0.1439	0.0719	0.0851	0	0.1274	0.2881	0.0969	0.0564	0.0304	0.0482	0.0979	0.0862	0.124	0.1152
Rimaszécsi	**Gömör**	**37**	0.1407	0.1153	0.1118	0.1443	0.969	0.045	0.1274	0	0.2731	0.0829	0.1044	0.1522	0.152	0.0756	0.1243	0.0597	0.1039
Kászonszék	Csíkszék	**142**	0.1516	0.1829	0.1728	0.1404	0.2427	0.2834	0.2881	0.2731	0	0.2791	0.2994	0.308	0.3179	0.3287	0.3264	0.3347	0.3392
Bodoki	Nyitra	**87**	0.1566	0.1515	0.176	0.1483	0.1202	0.0904	0.0969	0.0829	0.2791	0	0.127	0.1262	0.1411	0.0944	0.1415	0.0831	0.1019
Kaszonyi	Bereg	**19**	0.1568	0.1177	0.1382	0.1612	0.06	0.0742	0.0564	0.1044	0.2994	0.127	0	0.0599	0.0628	0.1067	0.0473	0.1294	0.1256
Bajmóci	Nyitra	**85**	0.1586	0.1321	0.1562	0.1631	0.0841	0.1108	0.0304	0.1522	0.308	0.1262	0.0599	0	0.0292	0.1051	0.0696	0.1311	0.1057
Felső	Torna	**106**	0.1725	0.1325	01553	0.1768	0.0857	0.1117	0.0482	0.152	0.3179	0.1411	0.0628	0.0292	0	0.1161	0.0821	0.1412	0.1255
Füleki	Nógrád	**64**	0.1778	0.139	01583	0.1821	0.1109	0.05	0.0979	0.0756	0.3287	0.0944	0.1067	0.1051	0.1161	0	0.0773	0.0324	0.0471
Kézdiszék	Háromszék	**148**	0.1783	0.1371	0.1591	0.1824	0.0913	0.0821	0.0862	0.1243	0.3264	0.1415	0.0473	0.0696	0.0821	0.0773	0	0.1012	0.0853
Mecsekháti	Baranya	**119**	0.1861	0.1524	0.167	0.195	0.1356	0.0647	0.124	0.0597	0.3347	0.0831	0.1294	0.1311	0.1412	0.0324	0.1012	0	0.0612
Felső	Fehér	**146**	0.1884	0.1542	0.1793	0.1941	0.1298	0.0913	0.1152	0.1039	0.3392	0.1019	0.1256	0.1057	0.1255	0.0471	0.0853	0.0612	0

Figure 4. Heat map of Felcsík (Sekler) District based on BC index

Source: own work based on AHSH 1720/22.

The similarity pairs for one of the Sekler districts (Felcsík) for the patronym type can be seen in Figure 4. Felcsík's typologically related regions are found in the neighboring districts. A large degree of similarity is further displayed in the Northern Hungarian region (in Gömör County and the Selmec district located in Hont County). The next similar territory is the Kővár district. It must be emphasized that, while Felcsík, Alcsík, Udvarhelyszék and the Ratkói district of Gömör County are exclusively similar to one another, the other places can be also connected to other territories. Based upon this

phenomenon, it is my opinion that a "Sekler-Gömör patronymic type" can be categorized based upon its most important characteristic, i.e., the emphasis placed upon family connection. A further characteristic lies in the low level of mobility, as indicated by the insignificant number of surnames derived from toponymics or ethnonyms.

DISTRICT/ FREE ROYAL CITY	COUNTY	LOCUS ID	93	114	153	47	8	10	1	72	115	116	76	103	108	84	139	20
Debrecen	Bihar	93	0	0.0318	0.0581	0.0666	0.1022	0.1072	0.1074	0.1097	0.1131	0.126	0.1388	0.1544	0.1685	0.1695	0.1708	0.1739
Szatmárnémeti	Szatmár	114	0.0318	0	0.0596	0.0643	0.0905	0.0998	0.1112	0.0951	0.1293	0.1211	0.1273	0.1399	0.1706	0.1549	0.1426	0.1779
Kolozsvár	Kolozs	153	0.0581	0.0596	0	0.0264	0.0459	0.0547	0.0572	0.0616	0.1692	0.0965	0.1071	0.1085	0.1601	0.1423	0.1506	0.2276
Hegyaljai	Zemplén	47	0.066	0.0643	0.0264	0	0.0639	0.0696	0.0571	0.048	0.1804	0.0733	0.082	0.0912	0.1425	0.1174	0.1252	0.2401
Esztergom	Esztergom	8	0.1022	0.0905	0.0459	0.0639	0	0.0517	0.0773	0.0756	0.1884	0.1342	0.1019	0.1158	0.1586	0.1396	0.1446	0.2042
Felső	Pozsony	10	0.1072	0.0998	0.0547	0.0696	0.0517	0	0.0682	0.052	0.2226	0.1405	0.0516	0.0826	0.1066	0.1065	0.1035	0.2219
Szikszói	Abaúj	1	0.1074	0.1112	0.0572	0.0571	0.0773	0.0682	0	0.0632	0.2223	0.1278	0.1049	0.1064	0.1593	0.1395	0.1477	0.2794
Muraközi	Zala	72	0.1097	0.0951	0.0616	0.048	0.0756	0.052	0.0632	0	0.2241	0.088	0.0748	0.0485	0.1341	0.1063	0.0858	0.2574
Nagybánya	Szatmár	115	0.1131	0.1293	0.1692	0.1804	0.1884	0.2226	0.2223	0.2241	0	0.2109	0.2564	0.2689	0.2723	0.2848	0.2762	0.1477
Pécs	Baranya	116	0.126	0.1211	0.0965	0.0733	0.1342	0.1405	0.1278	0.088	0.2109	0	0.1465	0.1318	0.2061	0.1758	0.1467	0.2946
Szigeti	Komárom	76	0.1388	0.1273	0.1071	0.082	0.1019	0.0516	0.1049	0.0748	0.2564	0.1465	0	0.0684	0.0604	0.0678	0.0765	0.2487
Győr	Győr	103	0.1544	0.1399	0.1085	0.0912	0.1158	0.0826	0.1064	0.0485	0.2689	0.1318	0.0684	0	0.1282	0.0572	0.0586	0.2951
Völgységi	Tolna	108	0.1685	0.1706	0.1601	0.1425	0.1586	0.1066	0.1593	0.1341	0.2723	0.2061	0.0604	0.1282	0	0.115	0.1202	0.2744
Péri	Közép-Szolnok	84	0.1695	0.1549	0.1423	0.1174	0.1396	0.1065	0.1395	0.1063	0.2848	0.1758	0.0678	0.0572	0.115	0	0.0894	0.3014
Besztercevidék	Besztercevidék	139	0.1708	0.1426	0.1506	0.1252	0.1446	0.1035	0.1477	0.0858	0.2762	0.1467	0.0765	0.0586	0.1202	0.0894	0	0.2552
Nagyszombat	Pozsony	20	0.1739	0.1779	0.2276	0.2401	0.2042	0.2219	0.2794	0.2574	0.1477	0.2946	0.2487	0.2951	0.2744	0.3014	0.2552	0

Figure 5. Heat map of Debrecen based on BC index

Source: own work based on AHSH 1720/22.

In the case of a heat map (Figure 5) displaying the toponymic surname type (with Debrecen as its point of comparison), beyond the aforementioned free royal cities, a further five districts display a close level of typological similarity to one another. One of them is (Tokaj-)Hegyalja District, an important center for wine production in previous centuries as well as today and, as such, a region where vintners and agricultural workers frequently congregated from more far-flung areas. The other districts had also similar properties. Based upon its most important particularity, this type can be called the "migration type".

These examples amply demonstrate that, when investigating the spatial and typological correlations found in the Hungarian surname system, this method shows more precise results compared to the simple observation of cartograms.

After that, I tried to determine the units that are typologically similar to each other by the method of cluster analysis. The purpose of classification is to show the relationships between each class or groups. The most common

representation of inclusive hierarchical classification is the dendrogram (tree-graph), which can be displayed so as to express the relationship between clusters (distance, similarity) numerically (Podani, 2000, p. 136).

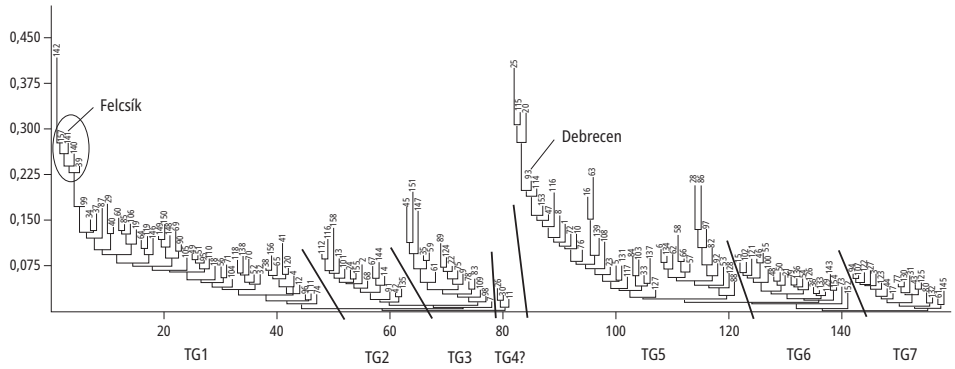


Figure 6. Cluster groups of Hungarian surname types (based on BC index; neighbour joining)

Source: own work based on AHSH 1720/22.

Using the cluster analysis, the Hungarian surnames of the 158 administrative units can be classified into seven groups (TG1–7) from a typological point of view (see Figure 6). It should be noted that this result was obtained from only one measurement method. Further studies are needed to confirm the results.[8]

5. Conclusions

Based on the research presented, the conclusion can be drawn that territoriality exerts a fundamental influence on the name types found in a given language's surname system. But these typological spatial differences are not exactly similar to linguistic dialects.

[8] However, it can already be said that a significant difference cannot be detected using the Euclidean distance (Podani, 2000, pp. 55–58) measurement either.

The main reason for this can, in my opinion, be found in extralinguistic factors. Since extralinguistic factors (migration, economic development, linguistic contact, etc.) play a fundamental role in influencing the development of spatial differences in surname types, the name model is subsequently affected. As I previously mentioned, dialects are primarily characterized and separated according to the components found in their linguistic system (phoneme system). This may explain why it is difficult to discover an overlap between the territorial features of surname types and traditional dialects. This circumstance, however, does not mean that types of onomastic dialects cannot be determined by means of name typology: it merely means that their characteristics diverge from dialect categories.

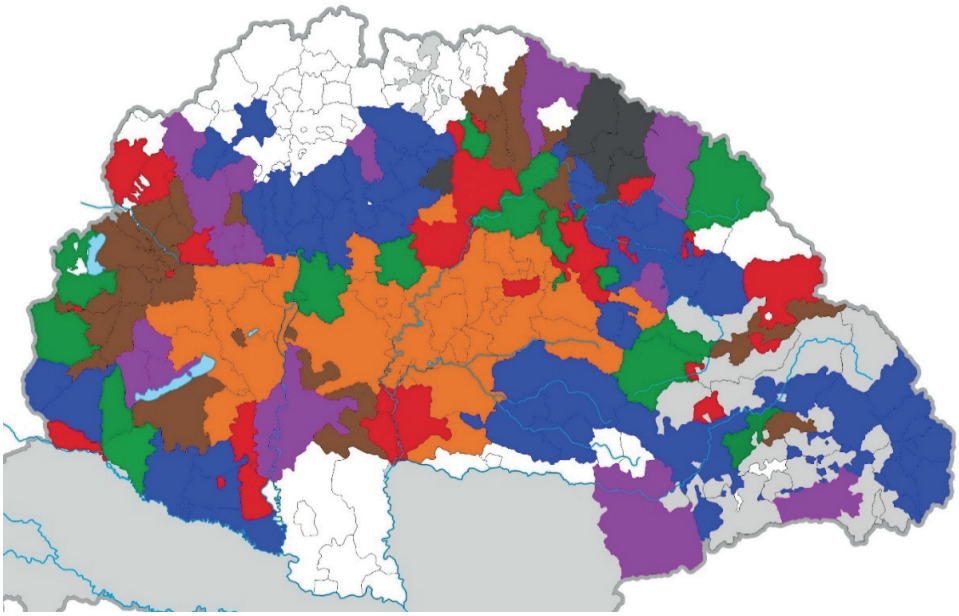


Figure 7. Spatial distribution of cluster groups of Hungarian surname types (TG1 = blue, TG2 = brown, TG3 = purple, TG4 = gray, TG5 = red, TG6 = green, TG7 = orange; see Figure 6)

Source: own work based on AHSH 1720/22.

In the case of similar factors that arise beyond the scope of language, the name model impact can generate a surname dialect type in locations found in

regions that are far from one another (see Figure 7). The relationships between the smaller units (districts, towns) within the onomastic dialectal groups of surname types require further investigation.

Acknowledgements

This research was supported by the National Research, Development and Innovation Office (Hungary) within the framework of the Thematic Excellence Program: "Community building: family and nation, tradition and innovation", ELTE 2019/20.

References

AHSH = N. Fodor, J. (Ed.). (2014–2023). *Történeti magyar családnévatlasz* [Atlas of Historical Surnames in Hungary] 1713/15, 1720/22. A Magyar Királyság és Erdély 18. század eleji személyneveinek adatbázisa és térképgyűjteménye. [Database and maps of Personal Names of Hungarian Kingdom and Transylvania at the beginning of the 18th century]. Eötvös Loránd University. https://csaladnevatlasz.hu/

Barker, S., Spoerlein, S., Vetter, T., & Viereck, W. (2007). *An Atlas of English Surnames*. Oxford: Peter Lang.

Bray, J. R., & Curtis, J. T. (1957). An ordination of upland forest communities of southern Wisconsin. *Ecological Monographs*, *27*, 325–349.

Cheshire, J. A., Longley, P. A., & Singleton, A. D. (2010). The surname regions of Great Britain. *Journal of Maps*, *6*(1), 401–409. https://doi.org/10.4113/jom.2010.1103

Cheshire, J. A., Longley, P. A., Yano, K., & Nakaya, T. (2014). Japanese surname regions. *Papers in Regional Science* 93: 539–555. https://doi.org/10.1111/pirs.12002

Darlu, P., Bloothooft, G., Boattini, A., Brouwer, L., Brouwer, M., Brunet, G., Chareille, P., Cheshire, J., Coates, R., Dräger, K., Desjardins, B., Hanks, P., Longley, P., Mandemakers, K., Mateos, P., Pettener, D., Useli, A., & Manni, F. (2012). The family name as socio-cultural feature and genetic metaphor: From concepts to methods. *Human Biology*, *84*(2), 169–214. https://doi.org/10.3378/027.084.0205

Ditrói, E. (2018). Statistical approaches to researching onomastic systems. *Onomastica Uralica, 11,* 31–42. https://mnytud.arts.unideb.hu/onomural/kotetek/ou11/03.pdf

Farkas, T. (2015). The most frequent Hungarian surnames. A study of some aspects of contrastive surname typology. In O. Felecan (Ed.), *Name and Naming. Proceedings of the Third International Conference on Onomastics "Name and Naming". Conventional*

/ Unconventional in Onomastics. (pp. 122–136). Cluj-Napoca: Mega & Argonaut. http://onomasticafelecan.ro/iconn3/proceedings/2_6_Farkas_Tamas_ICONN_3.pdf

Farkas, T. (2018). A surname typology project: The lessons learnt from the distribution of the most frequent Hungarian surnames. *Onomastica Uralica, 13,* 27–40. https://mnytud.arts.unideb.hu/onomural/kotetek/ou13/02.pdf

Hoffmann, I. (2007). *Helynevek nyelvi elemzése.* Budapest: Tinta.

Hough, C. (2018). Place-name evidence for Old English dialects. *Onomastica Uralica, 11,* 159–168. https://mnytud.arts.unideb.hu/onomural/kotetek/ou11/13.pdf

Insley, J. (2006). Early Germanic personal names and onomastic dialects. In A. J. Johnston, F. von Mengden & S. Thim (Eds.), *Language and Text: Current Perspectives on English and Germanic Historical Linguistics and Philology* (pp. 113–132). Heidelberg: Universitätsverlag Winter.

Jobling, M. A. (2001). In the name of the father: Surnames and genetics. *Trends in Genetics*, *17*(6), 353–357. https://doi.org/10.1016/S0168-9525(01)02284-3

King, T. E., & Jobling, M. A. (2009). What's in a name? Y chromosomes, surnames and the genetic genealogy revolution. *Trends in Genetics, 25*(8), 351–360. https://doi.org/10.1016/j.tig.2009.06.003

Lasker, G. W. (1980). Surnames in the study of human biology. *American Anthropologist*, *82*, 525–538. http://doi.org/10.1525/aa.1980.82.3.02a00030

Lasker, G. W. (1985). *Surnames and Genetic Structure.* Cambridge: Cambridge University Press.

Manni, F., Heeringa, W., & Nerbonne, J. (2006). To what extent are surnames words? Comparing geographic patterns of surnames and dialect variation in the Netherlands. *Literary and Linguistic Computing*, *21*(4), 507–528. https://doi.org/10.1093/llc/fql040

Manni, F., Heeringa, W., Toupance, B., & Nerbonne, J. (2008). Do surname differences mirror dialect variation. *Human Biology*, *80*(1), 41–64. https://doi.org/10.3378/1534-6617(2008)80[41:dsdmdv]2.0.co;2

Nicolaisen, W. F. H. (1980). Onomastic dialects. *American Speech, 55*, 36–45.

Ochiai, E., Osawa, M., Satoh, S., Tamura, T., Nakatome, M., Kaneko, Y., Kakimoto, Y., & Minaguchi, K. (2021). Y chromosome analysis for common surnames in the Japanese male population. *Journal of Human Genetics*, *66*, 731–738. https://doi.org/10.1038/s10038-020-00884-9

Parkin, D. H., (2013). Surname typology and the problem of inconsistent classification. *Names, 61*(4), 200–211.

Podani, J. (2000). *Introduction to the Exploration of Multivariate Biological Data*. Leiden: Backhuys Publishers.

Scapoli, C., Goebl, H., Sobota, S., Mamolini, E., Rodriguez-Larralde, A., & Barrai, I. (2005). Surnames and dialects in France: Population structure and cultural evolution. *Journal of Theoretical Biology*, *237*(1), 75–86. https://doi.org/10.1016/j.jtbi.2005.03.035

Scott, M. (2016). Names and dialectology. In C. Hough (Ed.), *The Oxford Handbook of Names and Naming* (pp. 488–501). Oxford: Oxford University Press.

Shi, Y., Li, L., Wang, Y, Chen, J., Yuan, Y., & Stanley, H. (2018). Regional surname affinity: A spatial network approach. *American Journal of Physical Anthropology*, *168*, 1–10. https://doi.org/10.1002/ajpa.23755

Shokhenmayer, E. (2016). Comparative study of the 100 most frequent Russian, French, German and British surnames. In C. Hough & D. Izdebska (Eds.), *Names and Their Environment. Proceedings of the 25th International Congress of Onomastic Sciences, Glasgow, 25–29 August 2014: Vol. 3. Anthroponomastics* (pp. 221–232). Glasgow: University of Glasgow.

Sousa, X., & Ginzo-Villamayor, M. (2020). Surname regions and dialectal variation in the Asturian linguistic space. *Journal of Linguistic Geography*, *8*(2), 102–114. https://doi.org/10.1017/jlg.2020.8