DISTANT READING OF THE METADATA OF THE DIGITIZED HUNGARIAN CHARM CORPUS

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Abstract: Based on Éva Pócs' manual charm index an online database was created for Hungarian verbal charms within the East–West Research Group at the Institute of Ethnology, Hungarian Academy of Sciences (Budapest), between 2013 and 2018. The main goal was to create a multidimensional digital database. Digital text preparation would open the gates to new interpretations and analyses, which would bring us closer to understanding the compound and complex phenomena of charms. In the Digital Database of Hungarian Verbal Charms users can search by various metadata, like date and place of collection/recording, name of collector/scribe, informant, type of source, function of the charm, rites/gestures, language of the text, keywords etc. This paper focuses on how different new arrangements and distant reading of the corpora can reshape our knowledge about the Hungarian verbal charms.

Key-words: digital database, digital textology, computational folkloristics, folklore database, distant reading, Hungarian verbal charms, visualisation of metadata, verbal charms

The first to call attention to the potential of computational research of large-scale metadata in the humanities was the literary historian Franco Moretti with his method of distant reading. (Moretti 2007). Although computational analysis has a long history within folkloristics and the problematic of classifying collected data has long preoccupied folklorists, we can only speak of large-scale digitization from the 2010s on, and therefore of large-scale digital folklore collections that truly require computational and digital, methods and assistance.[1]

According to Canadian digital humanists, Geoffrey Rockwell and Stefan Sinclair, large scale analyses do not interpret texts, rather they explain them. "Explaining is […] about discovering the large-scale patterns of change in texts. It is epidemiology; it tracks symptoms, not causes". (Rockwell–Sinclair 2016: 116). Translated to cultural studies or philology this means that they do not wish to explore the meaning of individual texts or phenomena (as happens in the case of close reading) but wish to explain the symptoms. After presenting some of the milestones of computational folkloristics, my paper will call attention to some of the symptoms through the distant reading of the metadata of the Hungarian verbal charm database and will formulate some suggestions for treating the symptoms.

BEFORE THE DIGITAL BOOM

The unmanageable quantity of texts presented a problem in folkloristics already before the digital boom and folklorists appeared among the pioneers of digital humanities. Folklorist-musicologist Bertrand Harris Bronson at the University of California, Berkeley began to use rudimentary IBM 5081 punch cards for typologizing Child-ballads in the 1940s (Bronson 1949; Voigt 1971: 540), practically at the same time as Roberto Busa, who is often called the father of digital humanities (Rockwell–Sinclair 2016: 49). Following this early precursor, computational folkloristic research really gained momentum during the 1960s,[2] and although it may seem that interest flagged during the 1980s and 90s, in fact computational folkloristics can be considered something continuous.[3]

The first research projects primarily were related to formalization, modelling, and taking off from these to typologization, as the potential of the computer was first and foremost in the assistance it could provide in classification. By then scholars of folk culture have long been struggling with "questions of storing, analyzing and comparing data, and when their data had become very

numerous these tasks could only be accomplished by computers" wrote Vilmos Voigt at the beginning of the 1970s (Voigt 1971: 540–541).

Folklorists were not only relying on computers for their speed and the possibilities offered by them for organizing and classifying data but were also hoping that they would be able to assign individual texts and especially the motifs appearing in the texts to several categories. Already in 1968 Éva Pócs, for example, at the time of her first attempt to typologize Hungarian charms, was hoping that punch cards would prove to be a good solution for future typological problems (Pócs 1968: 277–278).

DIGITAL DATABASE OF HUNGARIAN VERBAL CHARMS

We published the test version of the Digital Database of Hungarian Verbal Charms in August 2018 with 1712 charm texts at the conclusion of the ERC project Vernacular Religion on the Boundary of Eastern and Western Christianity, Continuity, Changes and Interactions,[4] under the European Union's Seventh Framework Program (FP7/2007-2013) /ERC grant agreement No 324214. Additionally our research group has digitally prepared 6037 texts. For the analyses of this paper, I have used the entire material that had been digitally prepared. The immediate precursor of the database is the two-volume collection of charms entitled Charms [Ráolvasások] that Éva Pócs and I published in 2014 (Ilyefalvi 2014; Pócs 2014). The two volumes: A, containing 19th–21st century texts, and B, comprising texts that survived in pre-19th century historical sources with their 1500 pages and nearly 3500 texts (and reference to further roughly 3000–3500 variants) is one of the most voluminous textual publications of European charms research.[5] In terms of its conceptualization it was a rather unique endeavour in that there is hardly any other collection of charms that attempts to bring together and publish the entire repertory of charms of a single nation/language from the earliest historical sources to the most recently collected folklore material. In the charms database we provided the following metadata to the individual records: type, function, ritual gesture, type of source, venue of collection/ collector, informant (name, sex, age, and further data if known), the language of the item, place of storage, reference to the original publication.

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THE CORPUS IN THE LIGHT OF THE METADATA

What can we conclude about this Hungarian digital charm corpus in the light of the metadata? What kind of symptoms can we observe? Thanks to digitization we can have a better understanding of the composition of the corpus than ever.[6] Although the unevenness of the corpus was already known (namely, that compared to charms deriving from folklore collection we have few historical data), now we have a much more detailed picture of the extent and nature of these.
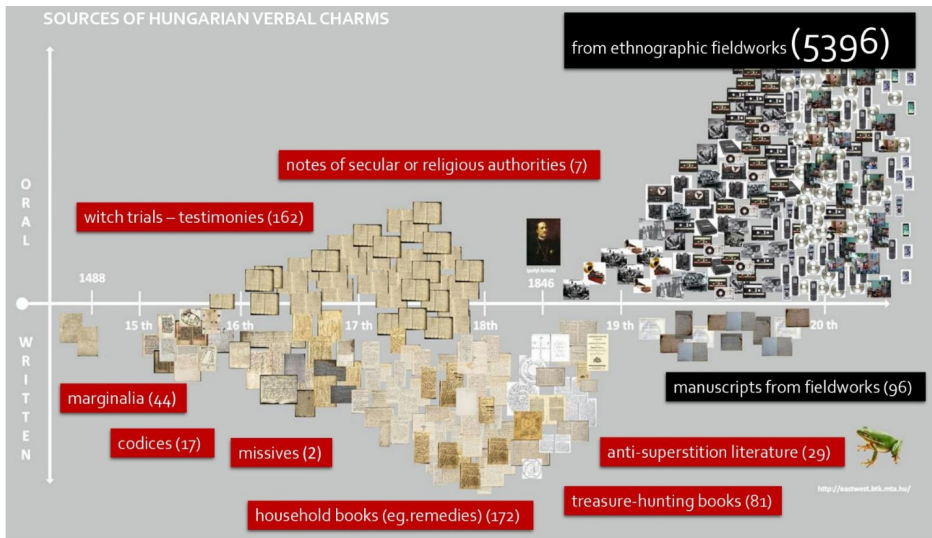

Figure 1: Infographic of the corpus of Hungarian charms drawn in Photoshop

In Diagram 1 we can see the visualization of the corpus of Hungarian charms drawn in Photoshop. The timeline demonstrates the differences between the two kinds of tradition (oral and written), their relative proportions, the spread of the sources of the corpus in time, the variety of sources, and changes in collection techniques. In the digitally drawn infographics I highlighted the most important milestones of Hungarian charms research (the Bagonyai charms as the first data of the genre in 1488, Arnold Ipolyi as the first folklorist to collect and publish charm texts in 1846), and I tried to place the data deriving from witness accounts of witch trials in the border zone between oral and written sources. Although the infographics say a lot about the corpus, they do not reflect the real proportions and unevenness. In order to see these, we need to carry out computational analyses.
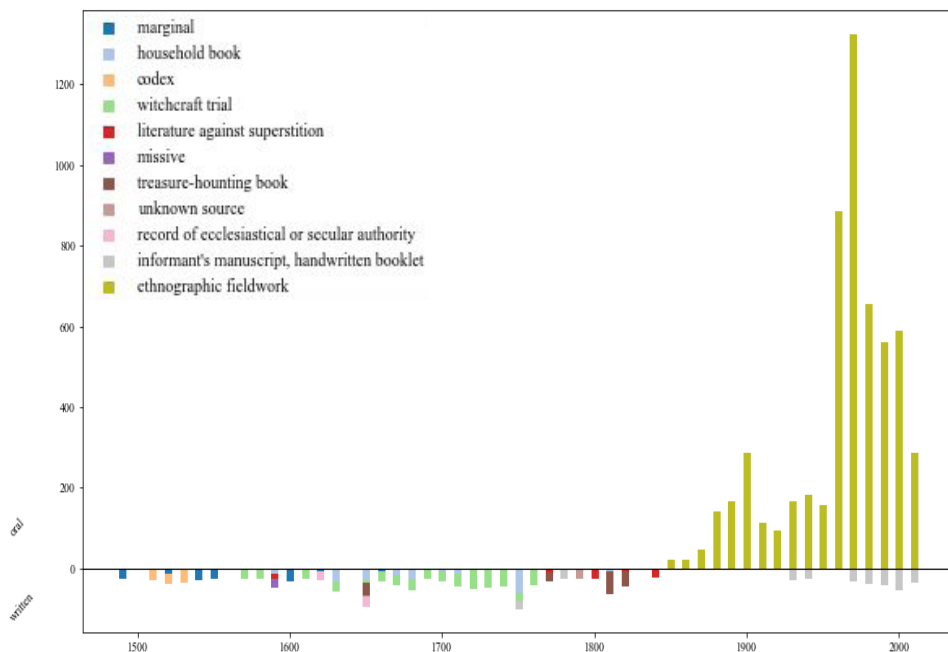

Figure 2: Distribution of the data of the charm corpus in time and according to the types of sources[7]
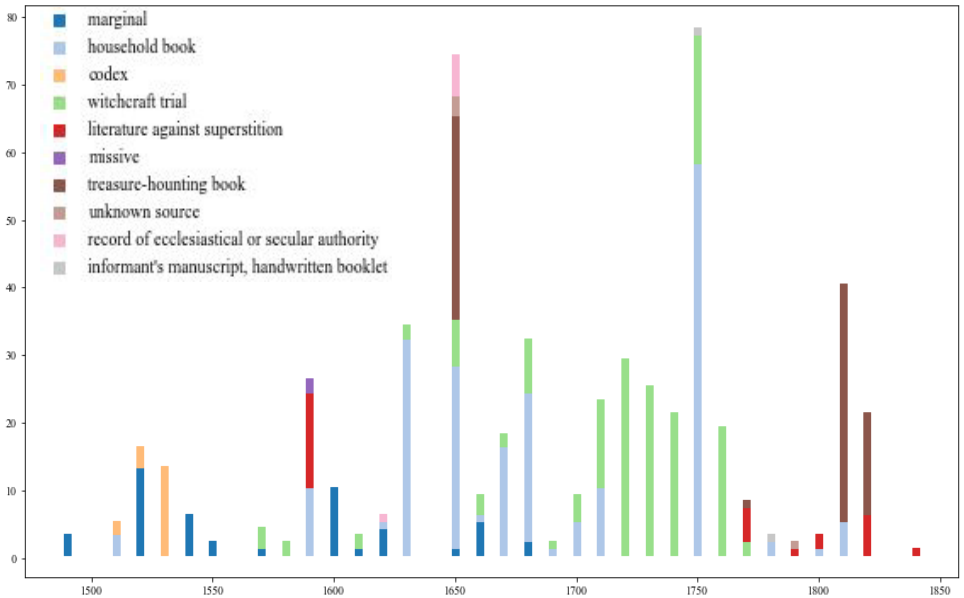
Figure 3: The distribution of pre-1851 charm texts in time and according to types of sources

According to the state of the database finalized on August 31, 2018, 82.11% of the corpus is comprised of texts collected during the course of the 20th – 21st centuries. Examining the text corpus according to the types of sources the proportion of texts from folklore collections is even higher. Altogether 90.98% of the data derive from 19th – 20th and 21st century folklore collecting.[8]

In the case of historical sources, the proportions demonstrate the arbitrariness and haphazardness of the exploration of the sources (Ilyefalvi 2014: 21–23). What is also remarkable is the almost complete absence of any evidence of the collection of manuscripts, i.e., of folk literacy. This lack is explained by the self-definition of folkloristics (as primarily researching orality) when it first emerged as a discipline.[9]

It is also instructive to examine how the data deriving from folklore (at present altogether 5476 items) are distributed over the 19th – 20th centuries. The graph below (Figure 4) shows the numerical values of folklore collections in 20-year blocks.
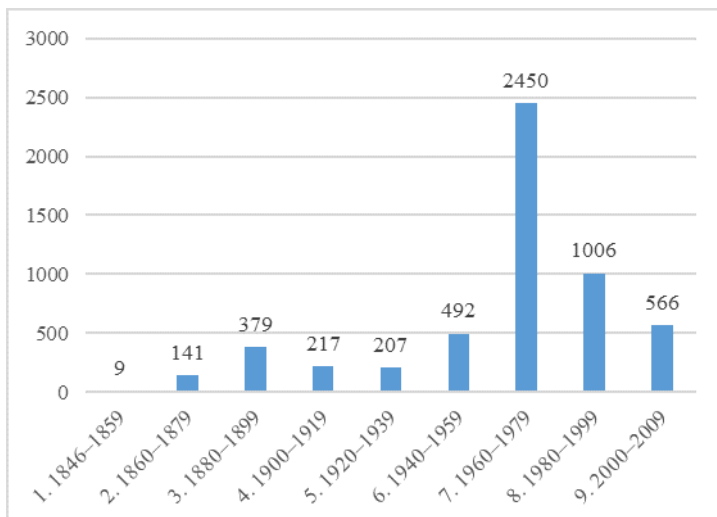
Figure 4: The distribution of the items of the charm corpus broken down into twenty-year blocks[10]

The amount of data in the period between 1960 and 1979 are exceptionally high, they comprise 45 % of charms obtained through folklore collection, altogether 2450 data items. For those familiar with Hungarian folkloristics and the history of Hungarian charms research the above proportions are perhaps not surprising but they certainly call for explanation. In the course of data collecting activity associated with the creation of the Atlas of Hungarian Folk Culture (AHFC), the Topography of Hungarian Folk Beliefs (THFB) and the Atlas of Szolnok County Folk Culture (ASzFC), several questions related to practices of healing/harming with charms were included, thus thanks to these questionnaire surveys we have country-wide data for the phenomenon (Barabás 1958; Diószegi 1967; Pócs 2001a; 2001b; 2014: 42). At the same time, if we compile the data without those of the various Atlases, we shall still see that from the 1960s, but especially from the 1970s on, the collection of charms by folklorists intensified (Figure 5). 33% of all folklore collection of charms derives from this period even without counting the results of the collecting activity carried out for these ethnographic atlases. This 'symptom' may be explained on the one hand by the fact that from the 1960s and 70s onwards, research on topics related to folk religiosity and folk beliefs was no longer prohibited by the Communist regime. On the other hand, this was the period

when the activities of a few dedicated charms scholars began to flourish or came into full bloom (Pócs 2014: 34).
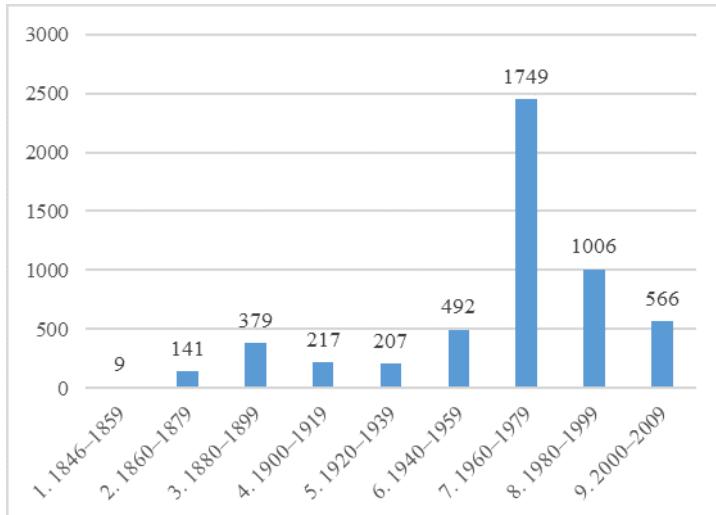

Figure 5: Distribution of the charm corpus without the data of the ethnographic atlases (AHFC, THFB, and ASzCFC)

In the course of digitally preparing the texts, we marked the rituals themselves and cases when speech acts (i.e. charms texts) were associated to them separately, therefore we can determine the proportion of descriptions of rituals to charms texts in the corpus. We may have had hunches and impressions about these earlier, however, asking this question and gaining a numerical answer to it is only made possible by digital data preparation.

	Data item	1. 1846–1859	2. 1860–1879	3. 1880–1899	4. 1900–1919	5. 1920–1939	6. 1940–1959	7. 1960–1979	8. 1980–1999	9. 2000–2009
Full corpus	5476	9	141	379	217	207	492	2450	1006	566
Texts	5176	9	141	366	215	206	471	2313	931	526
Rites	4270	9	120	370	156	177	363	1698	859	536
Texts/Data item	95%	100%	100%	97%	99%	100%	96%	94%	93%	93%
Rites/Data item	78%	100%	85%	98%	72%	86%	74%	69%	85%	95%
Collectors	542	4	19	52	76	68	77	157	71	18
Collector/Data item	9,9%	44%	13%	14%	35%	33%	16%	6%	7%	3%

Figure 6: Numerical values for data on texts and rituals among the material deriving from folklore collecting

Figure 6 shows that 95% of charms are constituted by texts in the corpus, which supports the earlier insight of Hungarian charms studies that researchers of the genre primarily collected and published those charms that entailed concrete speech acts. When querying the data of the table we will also realize that during the 1960s and 1970s, the above mentioned 'heyday' of charms collection, collectors paid the least attention to recording the rites and gestures belonging to the texts or at least to publishing them. Between 1960 and 1979, rites are noted down in 69% of the data, which is a much lower rate than among all the other charms combined, and even when we compare it to all the other time intervals. This can most likely be attributed to collecting methodologies (e.g. the questionnaires of the atlases.) If we re-examine the question excluding the data from the three questionnaires, we still get the same result, i.e., that although without those data the number of descriptions of rituals is much higher between 1960 and 1979, but still, compared to all other time periods (with the exception of the period between 1900 and 1919) the period still has significantly fewer description of rites and gestures (Figure 7).

	6. 1940–1959	6. 1940–1959 (without the atlases)	7. 1960–1979	7. 1960–1979 (without the atlases)
Full corpus	492	387	2450	1749
Texts	471	369	2313	1614
Rites	363	299	1698	1333
Texts/Data item	96%	95%	94%	92%
Rites/Data item	74%	77%	69%	76%

Figure 7: Numerical values for data on texts and rituals among the material deriving from folklore collecting without the data of the atlases (AHFC, THFB, and ASzCFC)

In the case of folklore corpora, it is important to know how many collectors the data comes from. The digital text corpus is the result of the collecting activity of 542 collectors.
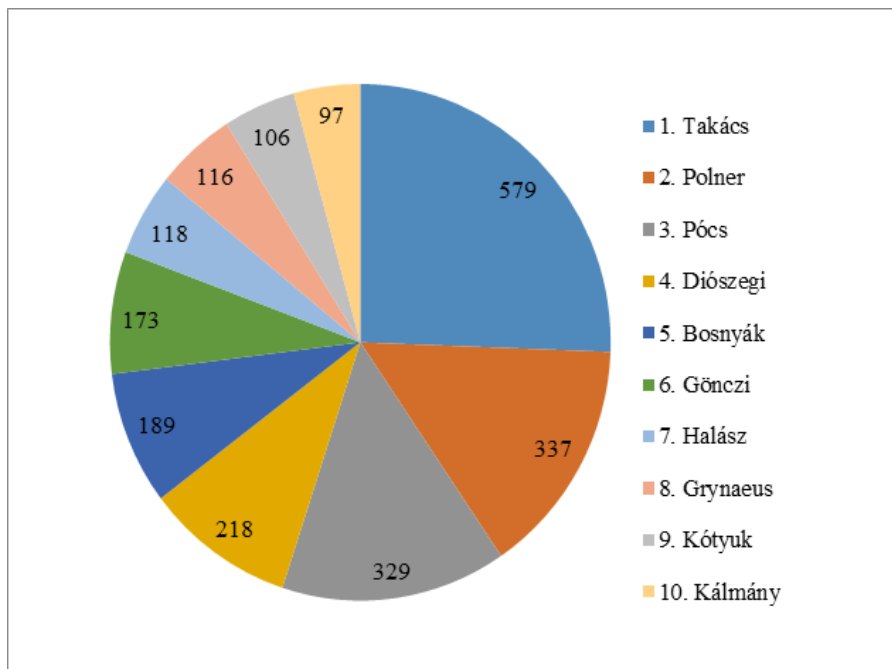
Figure 8: The ten researchers who collected the largest number of charms texts

The ten most prolific collectors can be seen on the pie chart (Figure 8). They collected 41.3% of all charms in the database, altogether 2262 texts. If we examine the proportions of the descriptions of rituals to speech acts, once again we will notice that between 1950 and 1973 Vilmos Diószegi and Éva Pócs who played a significant role in the large-scale folklore collections mentioned above, collected significantly fewer descriptions of rituals when compared to both other collectors and the totality of data.

Data item	1.György Takács	2. Zoltán Polner	3. Éva Pócs	4. Vilmos Diószegi	5. Sándor Bosnyák	6. Ferenc Gönczi	7. Péter Halász	8. Tamás Grynaeus	9. Erzsébet Kótyuk	10. Lajos Kálmány
Full corpus	5476	579	337	329	218	189	173	118	116	106	97
Texts	5176	557	317	328	214	174	161	91	92	98	97
Rites	4270	554	245	223	128	147	160	113	101	105	79
Texts/Data	95%	96%	94%	100%	98%	92%	93%	77%	79%	92%	100%
Rites/Data	78%	96%	73%	68%	59%	78%	92%	96%	87%	99%	81%

Figure 9: The number of texts and ritual descriptions collected by the ten most prolific collectors of charms

The corpus of György Takács whose collection activity stands out in terms of the quantity of texts he recorded. The database currently contains 579 texts (10.6% of the totality) that he collected in the course of fieldwork in Csík, Valea Uzului, and Ghimeș over the past 30 years. We also have to thank him for the most recent data. That is to say, if we examine the last twenty years of the corpus (altogether 1258 texts between 1990 and 2009), 46% of it has been collected by György Takács, but if we hone in on the last ten years, then 384 out of 566 texts, more than 50% of the total number in the database are there thanks to him.

It also follows from the above that for the most recent period we only have data from areas beyond the borders of Hungary and within that the majority come from research among Hungarians in Romania. Between 2000 and 2009 we only have 7 charms from Hungary, 2 from Ukraine, while there are 555 from among Hungarians in Romania. We can also see the unevenness of regional distribution when looking at the number of data broken down by county: Harghita /Hargita County 331), Bacău /Bákó County (210), Cluj/Kolozs County (1), Mureș/Maros County (13).

Overviews that indicate the number of data per settlement are indispensable, since it is possible that we have a proportionately large amountof data from after 2000, but they may be coming from a single region.

SYMPTOMS AND READINGS

From the above figures the unevenness of the Hungarian charms database is clear. Given this, in keeping with the changed scale of computational research we cannot consider our data to be longitudinal, for example it is not suitable for the computational study of historical change for this very reason.[11] Folklore databases can be large-scale in terms of their size, but they do not qualify as big data because they can never be complete datasets and for the most part, they have been prepared with particular research goals in mind. Folklorists have long been aware that folklore corpora, digital databases are artificially constructed. However, the enormous amount of digitized folklore material is not used only by folklorists. Because of the unevenness of the databases, we must make sure that we make the users aware of this in several different ways (e.g. in the introductory essays to the project, with the help of data visualization tools, etc.), so that they draw their conclusions from their analysis of the data with these characteristics in mind.

Good examples of this are the Dutch VolksverhalenBank and the Icelandic Sagnagrunnur. For example, gaining an overview of the Dutch folktale database corpus is helped by dynamic timelines operated by the users which makes it possible for them to see each hit in relation to the density of the collected data, too.
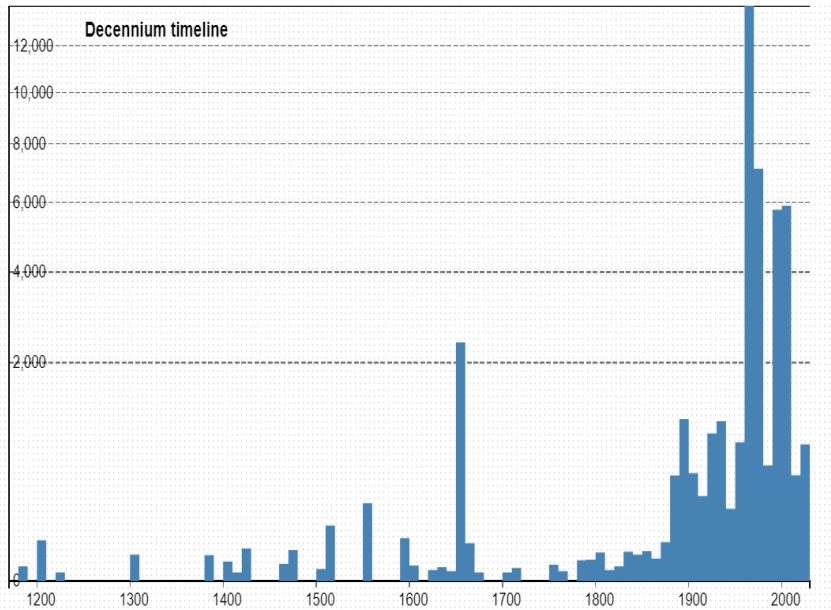
Decennium timeline

Figure 10: The dynamic timeline of Nederlandse VolksverhalenBank

   The material of the Icelandic belief narrative database was connected with
the mapping program called CartoDB in 2015, with its help viewing various
layers of the data becomes possible. Blue indicates the homes of the informants
(the size of the dots shows the number of informants from a given location
proportionately), orange shows the number of texts collected at a given locale,
while green conveys once again the number of informants at a given location,
however, the size of the dots depends on the number of texts collected there.
With the selection of the layers the user is free to choose from among the
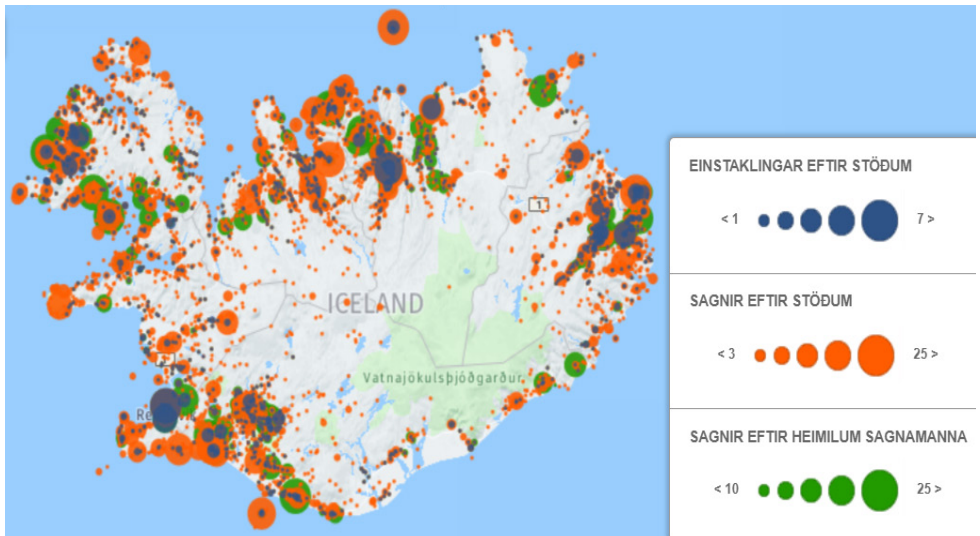various modes of presentation.[12]

Figure 11: The data of Sagnagrunnur visualized with the CartoDB program, after choosing all the layers

Digital data and computational research hold the possibility of new kinds of errors since a badly prepared data item or a poorly chosen analytical method or tool can lead to erroneous conclusions. Although this was true of humanities research prior to the digital age as well, possibilities for error (in part due to the increased scale) have multiplied. According to folktale scholar Donald Haase, for this reason folklorists of the future will be obliged to master quantitative computational methods (Haase 2016: 79).

The unevenness and arbitrariness of the Hungarian digital charm corpus call our attention to the need to incorporate several dynamic visualizations and summaries into the user interface of the digital database to unequivocally remind researchers and users of these shortcomings.[13]

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NOTES

[1] Cf. Abello & Broadwell & Tangherlini 2012; Tangherlini 2013, 2016; Kenna & Maccarron & Maccarron (eds.) 2017.

[2] Hungarian-born Thomas A. Sebeok for example studied the poetic and linguistic elements of various genres of Cheremis folklore, primarily folksongs (Sebeok 1965), the American anthropologist Benjamin N. Colby and his colleagues compared Kwakiutl, Egyptian Arabic, Inuit, Hindu and Chinese folktales with the help of computers (Colby–Collier–Postal 1963; Colby 1966). Under the direction of Marie-Louise Tenèze also during the 1960s French folklorists created a catalogue for French animal tales and created a system for digitally cataloguing folktales (Voigt 1971: 542). Canadian anthropologist Pierre Maranda modelled the organization of myths with the help of the computer (Maranda 1967). During the 1970s John Miles Foley analyzed the metrics of Beowulf with computer programs (Foley 1978).

[3] Cf., for example: Voigt–Preminger–Ládi–Darányi 1999. The first golden age of computational folkloristic and anthropological research can definitely be designated as the 1960s and 1970s, along with structuralism. See for example the edited volume primarily presenting North American research entitled The Use of Computer in Anthropology with an introduction by Dell Hymes (Hymes (ed.) 1965); or Vilmos Voigt's overviews regarding the question: Voigt 1971; 1976; 1981; 2007.

[4] See: http://eastwest.btk.mta.hu/.

[5] One of the largest recent text editions for example is Daiva Vaitkevičienė's Lithuanian charms collection, which publishes 1636 texts (Vaitkevičienė 2008).

[6] I am grateful to Péter G. Tóth for his help in preparing the tables for this study.

[7] Figures 2-3 were prepared by Márton Muntág, I am grateful for his assistance.

[8] The data collected from orality (89.37%) and from handwritten booklets of the informants (1.61%) add up to altogether 90.98%.

[9] Thanks to the collecting efforts of György Takács, this part of the collection has been significantly enlarged in recent years, but we have not yet incorporated the data into the charm corpus. Cf., for example: Takács 2018.

[10] Because dates were often missing from the record in many cases, we had to supply the timeframe ourselves, as a result the twenty-year blocks of the graph show an approximate picture only.

[11] Big data are such relatively complete datasets that did not come into being for the purpose of research. Cf. Rockwell & Sinclair 2016: 124.

[12] http://sagnagrunnur.com/2015/10/26/number-of-persons-and-legends-by-places/ (last consulted: 2019.03.21.).

[13] One of the best practices for dynamic research environment in folkloristics is the Dutch folktale database. On the user interface see: Muiser–Theune–de Jong–Smink–Trieschnigg–Hiemstra–Meder 2017.

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BIO

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