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This document compares the ***static*** and ***dynamic models*** of the development of the Rovas /rova:ʃ/ scripts. Please send any response regarding to this document to Gábor Hosszú (email: hosszu@eet.bme.hu).

In this document, the **IPA** (International Phonetic Alphabet) symbols are applied for representing phonemes extending with the symbols for the *undetermined back* /ʊ/ and *front* /ʊ̈/ *vowels*.

Contents

1. Latest proposals of the Hungarian National Body

Background information:

N4076 (2011-05-22): Historical and linguistic backgrounds of the Rovas scripts (in answer to N4064 L2/11-128, 2011-05-07)

N4055 (2011-05-15): Rationale of debated Szekely-Hungarian Rovas characters (in answer to N4042, L2/11-165, 2011-05-08)

Proposals:

N4007 (revised, 2011-05-21): **Szekely-Hungarian Rovas** (**SHR**)

N4006 (revised, 2011-05-19): **Carpathian Basin Rovas** (**CBR**)

N3999 (revised, 2011-05-19): **Khazarian Rovas** (**KR**)

2. Position of the Hungarian National Body

2.1. Purpose of encoding

Primary purpose is serving the present-day orthography and not only preserving one of the old alphabets.

2.2. Name of encoded scripts

Script names: our system is descriptive, follows the historical traditions and is backed by the agreement of the user community (decision of the "Living Rovas" Conference in Gödöllő – 2008-10-04). Any change on the names is not acceptable for the community.

2.3. Present-day Hungarian orthographies

The SHR is a contemporary writing system, the CBR has been revitalized; its popularity is increasing. **The basic character sets of SHR and CBR** are necessary for the present-day orthography. Same way, it is necessary to keep the coherency of the three Hungarian orthographies (Latin-based, SHR & CBR). The basic sets of the Rovas scripts are in practical use: lately, the published Rovas materials yearly multiple in terms of number. The areas and the intensity of Rovas usage are dynamically growing.

2.4. The family of the Rovas scripts

The three Rovas scripts are close relatives: Therefore, the common Rovas characters are proposed to encode only once. SHR is the primary due to its 100 000+ global users, CBR is the secondary (the characters being identical to SHR counterparts are excluded), and KR is the tertiary (the ones being identical to SHR or CBR counterparts are excluded).

Despite of the strong similarities, the Rovas scripts have to be regarded as individual scripts: They existed parallel in the same time, in the 9th-11th c., and their present-day use is different. The SHR and CBR are contemporary scripts, the KR is necessary for representing the historical relics. The character repertoires of all the three scripts are clarified enough for encoding.

2.5. Encoded character names

The character naming system of the Hungarian National Body is comprehensive and logical; the common characters of the Rovas scripts have identical names. The distinguishing attributes in the character names are partly traditional (including the characters of the present-day orthography), partly shape-based (e.g., ANGLED B, ARCHED B, ARCHED D, FORKED CH, CLOSE R, ANGLED T, CENTRAL T in N3999, N4006, & N4007). Oppositely, the naming method of the alternative proposal N3697 is casual, based on arbitrarily selected relics (see "*RUDIMENTA OE*", "*NIKOLSBURG UE*", etc. in N3697) or erroneous ("*ENT-SHAPED SIGN*" – see *Sect. 2.3.2* of N4076).

3. Consequences of the differing models

The close relations of the three Rovas scripts were first proved by archaeologist Vékony,[1] some examples in *Ch. 4* of this document demonstrate his dynamic theory as well. However, the static model considers the Nikolsburg alphabet as relic of the "ideal" Rovas script and considers the differing characters as mistake. That is why the development of the SHR in the 20th-21st c. is neglected by the N3566 and partly neglected by the N3697.

[1] Vékony, 2004

The proposals N3566 & N3697 rely on few relics increasing the possibility of mistakes. For example, if there was a typo (typographical error) in a relic, the static model cannot detect it. For instance, the N3697 is based on one original relic (Nikolsburg) and *four* others all being only copies of lost originals. The other alternative proposal N3566 uses the repertoire of the Nikolsburg almost exclusively.

The static model cannot handle natural developments like the invention of the SHR 𐳺 FIVE HUNDRED that occurred in 1971 first (*Fig. 7-4* of N4055). Eventhough, in the order of the SHR numbers (𐳁 ONE, 𐳂 TWO, 𐳃 THREE, 𐳄 FOUR, 𐳅 FIVE, 𐳇 TEN, 𐳈 FIFTY, 𐳉 ONE HUNDRED, 𐳊 ONE THOUSAND), the 𐳺 FIVE HUNDRED fits logically.

Contrary to the static model, the dynamic model examines each glyph in its genealogical lineage. In such a way, the casual mistakes can be filtered out. The Rovas Atlas contains the genealogy of every Rovas characters.[2] For instance, *Table 1* presents a part of the Rovas Atlas: the descendants of the *Phoenician* 𐤈 TET /tˤ/.

***Phoenician* 𐤈 TET /tˤ/**

> *Early Greek* Θ THETA /tʰ/[3]
>> *Euboean Greek (8th-5th c. BC)* ⊗ THETA /tʰ/
>> *Greek* Θ THETA /tʰ/ (*capital letter*)
>>> *SHR (9th-10th c.)* 𐳰 F /f/
>>>> *SHR (15th c.)* ⊗ F /f/
>>>>> *SHR (18th c.)* Θ F /f/
>> *Greek* θ THETA /tʰ/ (*minuscule letter*)
>>> *Glagolitic* ⰹ FITA /θ/f/
>>>> *Early Cyrillic* Ѳ FITA /f/t/θ/
>>>> *SHR (*9th c., 12th c.)* 𐳱 DIAGONAL F /f/

> *Early Aramaic* 𐡈 TETH /tˤ/
>> *Syriac (Estrangela from 2nd c. BC)* ܛ TETH /tˤ/
>>> **Early Steppean* *𐰚
>>>> **Proto-Rovas* *𐳟 /t/
>>>>> *CBR (7th c.)* 𐳟, 𐳝 ANGLED T /t/ > *(21st c.)* /c/
>>>>> *KR (8th c.)* 𐳟 ANGLED T /t/
>>>>>> *KR (9th c.)* 𐳞 ANGLED T /t/
>>>> *KR (8th-9th c.)* 𐰚, 𐳠 Z /t/z/
>>>>> *KR (9th c.)* 𐳡 CENTRAL T /t/
>>>>>> *SHR (*9th c., 15th c.)* 𐳡 TY /t/c/ (*before the 13th c. only* /t/)
>>>>>>> *SHR (16th c.)* 𐳡, 𐳢 TY /c/
>>>> *Old Turkic (Orkhon, Yenisei)* 𐰖 Z /z/
>> *Imperial Aramaic* 𐡈 TETH /tˤ/
>>> *Palmyran* 𐡈 TETH /tˤ/ *by a intermediary script or a variant of Nabataean* 𐢕,𐢖 TETH /tˤ/
>>>> *KR (9th c.)* 𐳜 ARCHED T /t/
>>> *Parthian* 𐭟 TETH /tˤ/
>> *Kharosthi* 𐨑[4] THA /tʰa/
>>> *Old Turkic (Orkhon, Yenisei)* 𐰉, 𐰋 AED /d/

Table 1: The relations of *Phoenician* 𐤈 TET /tˤ/ in the Rovas Atlas[5]

Despite of the limited flexibility of the applied static model, the alternative proposals (N3566 & N3697) also contain attempts for describing the history of the Szekely-Hungarian Rovas. The statement of N3566 about the "same origin" of the SHR and the Old Turkic (using the script names of the Hungarian National Body) is similar to the latest scientific results. However, N3566 does not clarify or prove this statement.

[2] Hosszú, 2011, *Ch. 4*
[3] Sihler, 1995, p. 20
[4] Dani, 1963, pp. 258-259, Dani suggested to derive Kharosthi THA from the Aramaic TETH.
[5] Hosszú, 2011, *Ch. 4*

Oppositely, the N3697 stated that the SHR and the Futhark version of the Runic scripts "*can be considered distant cousins*". As *Fig. 2* of N4076 demonstrates they are definitely not even related, and hence they cannot be taken as *cousins*.

The N3697 refers to the Kuban's Region as Central Asian territory. It is a significant geographical mistake, since the Kuban River is in East Europe, north of the Caucasus. The Kuban River was in the Khazar Khaganate, and the inscriptions found in the Kuban's Region are written with Khazarian Rovas. Oppositely, the Old Turkic script was used in the Second Turkic Khaganate, in Middle Asia. The two most important areas where surely Old Turkic relics were found are the valleys of the Orkhon and the Yenisei rivers in Mongolia and north of Mongolia (very far from Europe). Consequently, this fundamental statement of N3697 is false. The other statement of N3697, namely, the landtaking Magyars brought the SHR to the Carpathian Basin is not supported by any facts.

N3697 uses the study of Máté; however, its conclusion is erroneous as it was proved in *Sect. 2.3.2* of N4076. Moreover, N3697 states that the character ᛇ found in the Nikolsburg alphabet is a descendant of the Old Turkic ᚿ OE and regards the glyph ᛋ as individual character. In fact, the glyphs ᛇ and ᛋ are obviously glyph variants; and they originated from the ᚿ, ᛸ GH /ɣ/ as it was clarified in *Subch. 2.3* of N4055. It is noteworthy that in the Carpathian Basin, there are many CBR relics with the character ᚿ, ᛸ GH /ɣ/ (see N4006). Moreover, in the area of the Khazarian Khaganate (including the Kuban's Region as well) there are several relics with this character as well (see N3999). The genealogy of this character of the Rovas Atlas is presented on *Table 2*.

***Phoenician* 𐤇 HET /ħ/**

> *Early Aramaic* 𐡇 HETH /ħ/

> *Imperial Aramaic* 𐡇 HETH /ħ/

> *Parthian* 𐭇 HETH /ɣ/x/h/

> **Early Steppean* * /ɣ/

> **Proto-Rovas* * /ɣ/

> *CBR (7th c.)* GH /ɣ/ > *(21st c.)* GH /øː/

> *SHR (*9th c., 12th c.)* GH /ɣ/

>*SHR (15th c.)* OPEN UE /ø/øː/y/yː/

> *SHR (17th c.)* OPEN UEE /ø/øː/y/yː/ > *(21st c.)* /yː/

> *SHR (20th c.)* OPEN UE /y/

> CBR *(21st c.)* OE /ø/

> *KR (8th c.)* GH /ɣ/, *in Alan:* /ɡ/

> **Early Steppean* * /y/ø/

> *KR (8th-9th c.)* UE /y/*ø/

> *KR (9th-10th c.)* UE /y/ø/

> *SHR (*9th c., 12th c.)* V /y/u/uː/

> *SHR (14th-15th c.)* U /y/u/uː/

> *SHR (16th c.)* UU /u/uː/ > *(20th c.)* /uː/

> SHR *(17th c.)* UU /u/uː/

> *SHR (15th c.)* V /v/

> *SHR (20th c.)* W /v/

> *SHR (20th c.)* W /v/

> SHR *(21st c.)* W /v/

> *Old Turkic (Orkhon)* 𐰇 OE /ø/y/w/

> *Inscriptional Pahlavi* 𐭧 HET /h/x/

> *KR (8th c.)* ARCHED CH /x/

> *Hebrew* ח HET /ħ/x/

> *Nabataean* HETH /ħ/

> *KR (8th c.)* ANGLED CH /x/

Table 2: The relations of *Phoenician* 𐤇 HET /ħ/ in the Rovas Atlas[6]

The dynamic model handles the development of the Rovas scripts as a natural consequence of the changes in the languages. For instance, the sound /d͡ʒ/ is relatively new in the Hungarian language. The trigraph DZS for representing /d͡ʒ/ in the Hungarian Latin-based script was chosen in 1922, only.[7] The first Szekely-Hungarian Rovas character for denoting /d͡ʒ/ is attested already from 1935 (in *Fig. 7* of N4076),[8] albeit it gained its final shape in the last decade (, in N4007). In case of the DZ /d͡z/, the SHR character was attested in 1935, (*Fig. 7* of N4076), albeit its final form is (N4007).

The situation is similar in case of the SHR characters Q, W, X, Y. Due to the traditional Hungarian family names and the increasing number of loan words in the Hungarian language, increasing number of words contain the characters *q*, *w*, *x*, *y* in the Hungarian Latin-based script. These characters are semantically distant from the (Hungarian) Latinized form of their phonetic representations: *qu*/*qv*, *v*, *ksz*, *i*/*j*. That is why in the Hungarian Latin-based orthography, these characters (*q*, *w*, *x*, *y*) are not substituted by their Latinized forms.

Moreover, in case of the *w*, there is a new tendency: if *w* is used in English words, Hungarians with mid-high level English knowledge pronounce it naturally as /w/ (voiced labiovelar approximant) and not as /v/ (*voiced labiodental fricative*). Consequently, without Q, W, X, Y, the Szekely-Hungarian Rovas would be less usable than the Hungarian Latin-based script. Therefore, the coherency of the Hungarian written culture needs

[6] Hosszú, 2011, *Ch. 4*
[7] Korompay, 2003c, p. 781
[8] Sólyom, 2009

the identical repertoire of the present-day Hungarian orthographies: the Hungarian Latin-based, the Szekely-Hungarian Rovas and the Carpathian Basin Rovas scripts.

4. Comparison of the static and dynamic models on Rovas examples

In the middle of the 20th c, the scholars supposed that the Szekely-Hungarian Rovas script originated from the Old Turkic script; albeit, Sebestyén already pointed out the Phoenician origin of the SHR in 1915.[9] Later, the concept of the Old Turkic origin was simplified and the Old Turkic script was regarded as the ancestor of the SHR. In the end of the 20th c., the Old Turkic-based model became outdated due to the new Rovas finds, generating a search after a new comprehensive model. Due to the popularity of the Rovas scripts, there have been various published attempts to clarify the genealogy but the number of the outdated Old Turkic-origin model in the older literature is still overwhelming. In addition, the **old models are static (*time-invariant*)**, since they did not take into account the development of the Hungarian language.

In 1985, some relics of the Carpathian Basin Rovas and the Khazarian Rovas were deciphered.[10] From that time, more and more information was uncovered about the history of the Rovas scripts. Vékony realized the strong relation among the three Rovas scripts and the role of the Middle Persian scripts in their developments. Based on the diligent research works carried out in the last years and the consultations with acknowledged scholars, the inscriptions of some historical relics were clarified and transcribed differently from the earlier readings. In 2009-2010, a **dynamic *(time-dependent)* model** of the development of the Rovas scripts was elaborated.[11] This dynamic model is based on the large number of Rovas finds in the Carpathian Basin and in the Eurasian Steppe; [12] their transcriptions, [13] and the results of the Hungarian historical linguistics, [14] Turkology, [15] archaeology, history, and the paleography.[16] This model takes into account the time-dependent changes in the languages of the inscriptions (focusing on the Hungarian and the Turkic languages), the geographical and the historical facts. Using a special application of *Ockham's razor* (*law of parsimony*), the genealogy of each Rovas character was elaborated. Based on the discovered relations, a systematic description of the Rovas and related glyphs named **Rovas Atlas** was proposed.[17] Some examples of the genealogical relations of the Rovas characters are presented below.

The alternative proposals N3566 & N3697 apply the static model concentrating on the Nikolsburg alphabet (15th c.). Its significant consequence is that the Rovas inscriptions of the early relics (below) cannot be transcribed. In addition, because of omitting the results of the linguistic history, the alternative proposals N3566 & N3697 cannot interpret the early inscriptions, as some examples demonstrate in the followings.

4.1. The Bodrog clay twyer, (around 900) – SHR relic

Its one-word long Hungarian inscription is ◊ϑϽΘ, and the transcription /fuːneːk/ 'I'd like to blow (the fire for melting iron) is supported by the Hungarian linguists.[18] In this inscription, there is the ligature of AA and N: ϑ. In the present-day Hungarian, the form of this word is /fuːnaːk/. However, according to linguist Korompay, the optative-conditional mood present time singular first person verbal suffix in the Ancient Hungarian was consequently *–nék* /-neːk/ and not *–nák/–nék* /-naːk/-neːk/ even in case of velar verbs, which contain back vowels.[19] The verb /fuː/ is a velar verb. Consequently, its sound value was not /aː/, but /eː/ instead. Therefore, the character ϤAA represented /eː/ in this case.

According to the static model of N3566 and N3697, the SHR ϤAA represents /ɒ/aː/ exclusively. Oppositely, in the dynamic model, it is clear that the SHR ϤAA is the descendant of the CBR ϒFORKED E, which had the

[9] Sebestyén, 1915, p. 158
[10] Vékony, 1987a; 1987b, pp. 211-256
[11] Hosszú, 2011, *Ch. 3*
[12] Erdélyi, 1991
[13] Vékony, 1985, pp. 71-84
[14] E. Abaffy, 2003a, pp. 106-128; 2003b, pp. 301-351; 2003c, pp. 596-609; 2010; Király, 1977, pp. 314-331; Korompay, 2003a, pp. 101-105; 2003b, pp. 281-300; 2010; Zelliger, 1994, pp. 209-215; 2010-2011
[15] Vásáry, 2003; 2010-2011
[16] Hockett, 1958, p. 545; Rogers, 1999, pp. 247-248; p. 260
[17] Hosszú, 2011, *Ch. 4*
[18] Korompay, 2010
[19] Benkő, 1991b, p. 144; E. Abaffy, 2003b, p. 338; Korompay, 2010

sound values /a/aː/ɛ/eː/ based on the historical CBR relics.[20] Therefore, the sound value /eː/ of SHR AA is understandable in the 9th c.

4.2. Jug No. 6 in the Nagyszentmiklós Treasure (9th-10th c.) – CBR relic

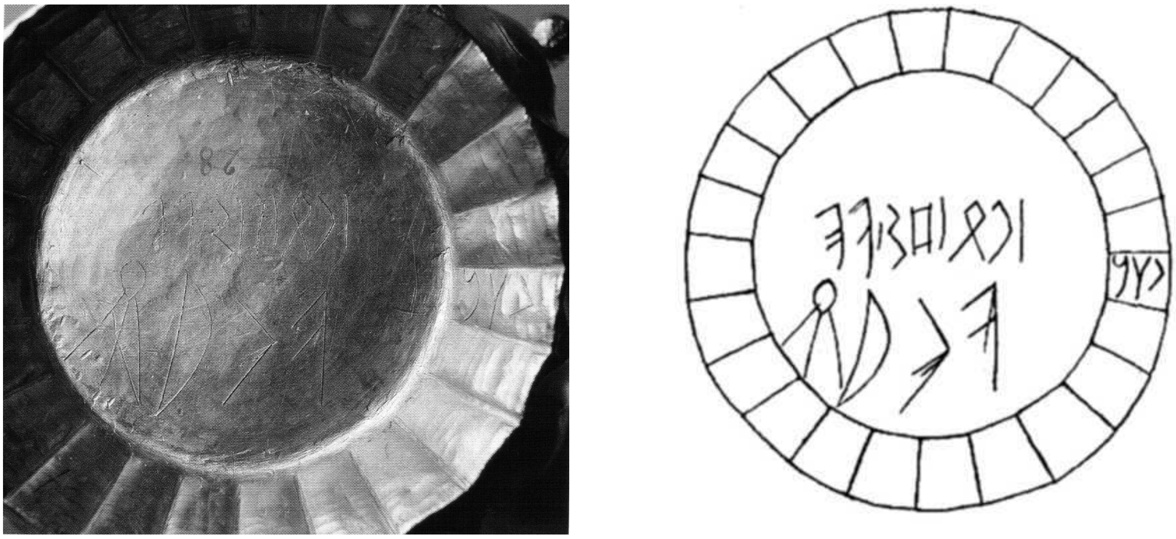

Figure 1: The photo of the bottom of the *No. 6* jug and the drawing of the quadrilingual inscriptions[21]

The jug on *Fig. 1* contains four inscriptions in different languages having essentially the same meaning: 'water'. The upper middle row contains the Ogur expression /sïu̯-s^{y}r^{i}m/ 'water-filtered/cleaned water' and the Hungarian /β^{i}z^{i}/ 'water'.[22] This word still exists in the present-day Hungarian; its current form is *víz* /viːz/. In the Ogur expression, the M is the ancestor of the SHR M. The Hungarian word contains the OPEN V /β/ and the ancestor of the SHR Z /z/: the CBR Z /z/.

The bottom middle row is a Slavic word: /v^{o}d^{o}jɔ̃/ 'with water'. In this word, the besides the OPEN V, the CBR D is visible. Its genealogy is: CBR D /d/ > SHR T /d/t/ > SHR T /d/. In the Vargyas relic, the SHR T occurs two times, it represents /d/ and then /t/ (see *Ch 3* of N4055).

The RAISED U /ɔ̃/ was borrowed from the Early Cyrillic: Ѫ YUS, (*old name:* ѫсъ /ɔ̃sŭ/) /ɔ̃/. In the Carpathian Basin Rovas, there was not a character for /ɔ̃/ before, since this sound did not exist in either the Hungarian or the Ogur or the As-Alan languages.
The text *in the sidewall frame* is in As-Alan language: /dan$^{(u)}$/ 'water'. The CBR character A relative of the FORKED E. The CBR character NY /n/ has not descendant in the SHR. This character clearly shows the similarity of its ancestor, the *Early Aramaic* NUN /n/ or the *Imperial Aramaic* , NUN /n/.

4.3. Jugs No. 3 and No. 4 in the Nagyszentmiklós Treasure (9th-10th c.) – CBR relic

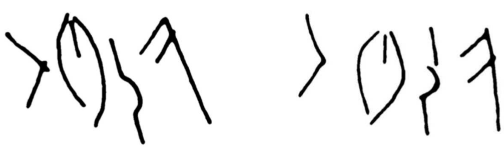

Figure 2: The inscriptions of the jugs *No. 3* and *No. 4*[23]

The word /boʃ^{a}d/ is relative to the Khazarian Rovas inscription of the Novocherkassk clay flask in Kypchak: /boʃ^{a}/ (*Fig. 2-3/a & b* in N3999).[24] The Preossetic (As-Alan) inscription of the Stanitsa

[20] Vékony, 2004, *passim*
[21] Kovács, 2002, p. 22; Hampel, 1884, pp. 1-166, 1-2
[22] Vékony, 2004a, pp. 137-138
[23] Hampel, 1884, pp. 1-166, 1-2
[24] Vékony, 2004a, p. 250

Krivyanskoe clay flask contains KR /βoʃo/ (*Fig. 2-4* in N3999).[25] The original Turkic form of this word was surely /boʃa/ and *-d* was the regular diminutive suffix existing in the Ancient Hungarian linguistic age.[26] Consequently, the language of this inscription is Hungarian.

The word *boza* is well known among the Turkic nations as well, as a fermented beverage. The *boza* is originally made of millet, and – as it is known - the Central Asian Turks invented it. In English, the word *bosa* was adopted from the Turkic *boza*.

In the CBR /βoʃ^{a}d/, the character O is the ancestor of the SHR O. The descendant of the CBR S /ʃ/ can be found in the Nikolsburg relic as US /ʃ/.

4.4. Flat-shallow ladles in the Nagyszentmiklós Treasure (9th-10th c.) – CBR relic

Figure 3: The inscriptions of the flat-shallow ladles[27]

As the archaeologist Gy. László discovered, these ladles were not used for drinking but for eating some delicacy.[28] The Hungarian inscription was transcribed by Vékony[29] and his result was improved by Zelliger:[30] /β^{a}d^{u} e:t<u>ky</u>/ 'forest food' (=fruit). The word /β^{a}d^{u}/ still exists in the present-day Hungarian; its current form is *vad* /vɒd/ 'wild, not-cultivated, woodsy'. Since the ladles are very small, they might be for fruits like forest berries. Note that the transcription of this inscription is almost identical to its appropriate expression in current Hungarian: *vad étek*. The CBR characters KUE /ky/ and CLOSE T /t/ did not survived in the SHR.

4.5. Jug No. 5 in the Nagyszentmiklós Treasure (9th-10th c.) – CBR relic

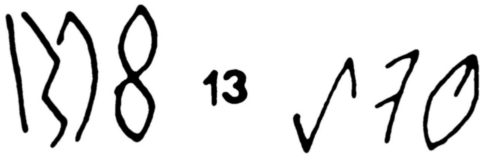

Figure 4: The inscriptions of the jug[31]

The meanings of the Ogur /xïmïs/ or /qïmïs/ and the Hungarian /ʃ^{a}β^{o}ɣ/ are identical: 'Whey'. In the *Fig. 4,* the mirrored variant of GH /ɣ/ occurs. Another variant of Q /x/q/ is Q /x/q/, which is the ancestor of the SHR CH /x/ (survived in the Nikolsburg relic, see *Fig. 3* in N4076). The change /q/>/x/ was specific for the Ogur;[32] the Finno-Ugric Hungarians adapted this character with sound value /x/. Moreover, the SHR H /h/ was created by duplicating CH /x/ between the 11th and the 14th c.

4.6. The Alsószentmihály stone inscription (10th c.) – KR relic

The inscription on a building stone was found in Alsószentmihály (Transylvania, Romania); its photo was made by E. Benkő (*Fig. 5*).[33] The stone was an ancient Roman building stone - proved by the leaf-symbol, a frequently applied ornamental element of ancient Roman inscriptions - reused in the 10th c. Alsószentmihály located on the territory of the late Province Dacia existed up to the middle of the 3rd c. Dénes showed that the *Khavars* (Khazar rebels joined the Hungarians in the 9th c.[34]) probably settled in this region (that time

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[25] Vékony, 2004a, p. 257
[26] Sárosi, 2003, p. 142
[27] Hampel, 1884, pp. 1-166, 1-2
[28] László - Rácz, 1977, pp. 174-176
[29] Vékony, 2004a, pp. 148-149
[30] Zelliger, 2010-2011
[31] Hampel, 1884, pp. 1-166, 1-2
[32] Vásáry, 2010-2011
[33] Benkő, E.,1972a, p. 453 & Appendix; 1972b
[34] Kristó & Makk, 2001, p. 52

Transylvania).[35] In some parts of Hungary, there are data of the Khavars even from the 13th c.[36] The drawing of the KR inscription and its transcription are presented in *Fig. 5* and *Table 3*.[37]

Figure 5: The Alsószentmihály inscription (920-952)

Written with Khazarian Rovas font	*First row:* [illegible] *Second row:* [illegible]
IPA phonetic transcription	*First row:* $^{\varepsilon}$bi ^{a}tlïɣ *Second row:* jyedi • kyr qar^{a}j
Translation from Common Turkic (Khazar)	*First row:* ‘His mansion is famous.’ *Second row:* ‘Jüedi Kür (the) Karaite.’

Table 3: Transcription of the Alsószentmihály inscription

The word /ɛb/ was used for larger buildings in the Khazar building inscriptions;[38] therefore, its meaning is ‘mansion’. The word /jy^{e}di/ meant *Jewish* in Khazar language, in this case it could have used as a personal name. The /kyr/ means ‘courageous’ and ‘fearless’ in Turkic, such personal names are typical in Turkic languages. Therefore, the second row or at least the first two words (*Jüedi Kür*) formed the name of a Khavar leader. The word *Karaite* also could have been a personal name. The *Karaite* Judaism is a branch of the Jewish religion accepting the five books of Moses but not the Talmud, oppositely to the Rabbinic Judaism. The symbol in the third row could have been a tamgha.[39]

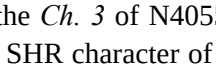
In this relic, the KR ◊ K /q/ is the ancestor of the SHR ◊ K /k/, the KR Ƕ R /r/ is the ancestor of the SHR Ƕ R /r/. The KR M UE /y/ is ancestor of the SHR M V /y/v/ (see *Subch. 4.7* in this document). The KR D J /j/ is identical to the CBR D J /j/; the KR ß KUE /ky/ is identical to the CBR ß KUE /ky/, the KR 1 ANGLED I /i/ and the Y A /a/ are also common character with the CBR but not in the SHR.

The following Khazarian Rovas characters cannot be found in other Rovas scripts: ♀ RAISED B /b/, ∩ ARCHED D /b/. The ∩ ARCHED D is in a systematic KR ligature, the ⋒ DI /de/di/ed/. The symbol ⋈ is the ligature of X ANGLED T /t/ + ﬤ SIMPLE L /l/ + N GH /ɣ/.[40]

The punctuation symbol ǁ KHAZARIAN ROVAS SEPARATOR LARGE is specific for the Khazarian Rovas and it cannot be found in other Rovas scripts. The diacritic mark ◌̇ SEPARATOR DOT ABOVE is also specific for the Khazarian Rovas; however, it is descendant of the ◌̇ COMBINING STOP ABOVE in the Inscriptional Pahlavi script. It is used in the first row of this inscription.

[35] Dénes, 1984-1985, p. 573
[36] Györffy, 1990, p. 50
[37] Moravcsik, 1984, p. 85; Vékony, 1987a, pp. 108-117; 1997, pp. 108-117; 2004, pp. 217-230
[38] Vékony, 1997, p. 110
[39] Vékony, 2004, p. 228
[40] Vékony, 2004, p. 228

4.7. The Vargyas stone carving (12th c.) – SHR relic

The reliable transcription of the Vargyas relic cannot be interpreted by the static model of N3697 as it was clarified in the *Ch. 3* of N4055 and in *Sec. 2.3.3* of N4076. In this inscription (
/ⁱmeː fioɣ tᵉ nᵋkyd/, the SHR character of the sound /ɣ/ occurs (precisely
, glyph variant of
GH, see examples in *Fig. 3* & *4*). The static model interpreted this character as
R /r/, since the
GH did not occur in the Nikolsburg relic. In fact, the /ɣ/ disappeared from the Hungarian language in about the 11th c. It is noteworthy that the
GH survived in the form of
OPEN UE /ø/øː/ in the Nikolsburg relic (see details in N4076).

The Vargyas relic also contains a character:
. This glyph is identical to the SHR
H /h/. However, the static model in N3697 neglected that in the age of the Vargyas relic, the sound /h/ did not exist (or it was sporadically used, only). As it is highly unlikely that there was a character for a non-existing sound, the glyph
represented
CLOSE E /e/eː/ in the Vargyas relic.

The sound /y/ is represented in the Vargyas relic with
V, which also cannot be interpreted by the static model of N3566 & N3697, since it shows the early form of the Khazarian Rovas
UE /y/ø/ (see *Subch. 4.6*), which was borrowed by the SHR as
V /y/. This character could not used for /ø/, since it developed later in the Hungarian language. The Vargyas relic shows this earliest state of the SHR character
V.

4.8. Homoródkarácsonyfalva wall script (12th-13th c.) – SHR relic

The interesting feature of this relic is the use of
V for representing /uː/, which cannot be interpreted by the static model of N4042, in which this character is a consonant for /v/ exclusively. The relic is discussed in *Fig. 2-2* of N4007. The dynamic model can derive the character
U from
V /u/uː/y/v/ by supposing the duplication of the glyph
, which was typical in the medieval Hungarian Latin orthography. There are examples for the *vv* representing /uː/.[41]

4.9. The Székelydálya wall script (14th c.) – SHR relic

This large wall script contains the only one known occurrence of the character
OPEN V /β/; see *Fig. 2-3* of N4007 and *Sec. 2.3.3* of N4076. It occurred in the word
/ᵋstᵋnd̲ᵋβ/ 'year' (archaic form of the present-day /ɛstɛndøː/ 'year')[42] in the right bottom part of *Fig. 2-3* in N4007. The sound value /β/ was common in the Hungarian language, but in 12th-13th c., change /β/>/b/v/ occurred,[43] and then /β/ gradually disappeared from the Hungarian language. Therefore, the
OPEN V does not occur in other relics. However, in the CBR and KR relics, it is frequently applied (see *Fig. 1*, *2*, *3*, *4*, & *5*). The static model cannot deal with this character, since it did not occur in the Nikolsburg alphabet.

4.10. The Nikolsburg alphabet (15th c.) – SHR relic

The critical issue in this relic specific symbol
TPRUS, which was erroneously interpreted by the static model; see *Section 2.3.2* of N4076. In fact, the
TPRUS is the descendant of
NAP, which was created from the ligature of
N +
O +
P = /n̲op/. However, the result of the historical linguistic is necessary for interpreting this ligature: before the process of "becoming more open", the Hungarian word /nop/ meant 'day, period', than it changed to /nɒp/.

5. Conclusions

In the view of the Hungarian Nation Body, the best solution is the encoding based only on scientifically confirmed concept, and not making compromise for nonscientific reasons. There is an obvious gap between the proposal of the Hungarian National Body and some other individual proposals: **The proposals of the Hungarian National Body make up a comprehensive system backed by the latest scientific results**. These

[41] HB
[42] Zelliger, 2010-11
[43] E. Abaffy, 2003b, p. 303

are based on a *dynamic model* taking into account the development of the languages themselves besides the ethnographical, geographical and cultural changes. The other proposals (N3566 & N3697) do not consider these factors based on their outdated *static model* of the development of SHR.

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