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A HISTORICAL PHONOLOGY OF WESTERN KARAIM. THE EVOLUTION OF CONSONANT HARMONY IN THE NORTH-WESTERN DIALECT*

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Abstract

This article is an attempt to establish the time-frame and relative chronology of the evolution of consonant harmony in north-western Karaim. The sample material used for the present article comes from a Karaim handwritten Torah translation dating back to 1720 (the oldest analysed Western Karaim Bible translation), copied in Kukizów by Simcha ben Chananiël and written in the Karaim semi-cursive variant of the Hebrew script. Additionally, in the present article an attempt is made to describe step by step how the harmony shift operated.

1. Preliminary remarks

In north-western Karaim, the original front-back vowel harmony has shifted towards palatal vs. non-palatal consonant harmony. As a result of this process it is the consonants which started to agree with each other with respect to palatality and velarity and not the vowels. In the interests of clarity, I will call this process *harmony shift*.¹

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¹ In this article, I have refrained from joining actively the debate on whether this phenomenon should be interpreted as syllabic or rather as consonant harmony (for such a discussion see e.g. Hamp 1976; Csató 1995; Csató 1999; Nevins, Vaux 2004; and K. Stachowski 2009) since, on the one hand, the present paper is meant to document a linguistic process in historical

There were several restrictions that affected this process mentioned. Firstly, the fricatives *f* and *χ* never became palatalised as a result of this process (only in front of *i* as a result of mere coarticulation) and, additionally, the word-final *-k*, *-m*, *-p*, and *-r* were never palatalised, too. Secondly, the idiolectal pronunciation of palatal (or palatalised) consonant clusters could have varied: the last consonant in the cluster, the one preceding the originally front vowel, was always palatalised, while the one(s) preceding it could have remained non-palatal. Thirdly, loanwords were often disharmonic. Fourthly, consonants standing before *e* in the first syllable also became palatalised even though they did not take part in an **e > 'a* process, cf. e.g. [tʰeŋgiz]² 'sea' < *tengiz* or [ʃeŋ] 'you' < *sen*. Lastly, it is only the non-initial vowels *ö*, *ü*, and the non-first-syllabic *e* that were involved in this process.³ These rules mean that:

1. There was no *ö- > 'o-* and *ü- > 'u-* change in the initial position.⁴
2. There was no *e- > 'a-* change in the initial position. Moreover, *e* always remained *e* in the first syllable,⁵ also in postpositions and in words used as the second element of compound words.
3. There was no *i > 'y* change, above all because it was difficult to combine the pronunciation of the furthest back vowel *y* with palatal (or palatalised) consonants.

2. The analysed manuscript

The discussion presented in this article is based on the linguistic material collected from a fully-vocalised early 18th-century manuscript from Kukizów that contains translations of the Torah (folios 1 r^o – 341 r^o), the Book of Ruth (342 r^o – 347 v^o), the Book of Jeremiah (348 r^o – 358 r^o), Ecclesiastes (358 v^o – 372 v^o) and the Book of

perspective – regardless of terminological issues and linguistic theories concerning 20th-century north-western Karaim, and, on the other hand, since a very detailed and rather convincing recapitulation of the whole discussion as well as a review of the existing theories has been recently published by K. Stachowski (2009). Personally, I am not convinced that this phenomenon is a type of syllabic harmony, thus I will use the term *consonant harmony*.

² In this paper I could not avoid using two different transcription systems: a phonological one for Middle Western Karaim (as it offers a reliable interpretation) and a separate transcription for Modern Western Karaim examples in their north-western and south-western varieties (see my remarks regarding the periodisation of Karaim in Németh 2014b and Németh 2015). To make the distinction between these two ways of transcribing clear, I will enclose Modern Karaim examples transcribed phonetically in square brackets.

³ According to Pritsak (1959: 327) and Hamp (1976: 212), word-initially, *ü-* may have alternated with *ju-*.

⁴ The sign ' stands for the palatalisation of the preceding consonant.

⁵ There are some examples that seemingly contradict this rule, such as e.g. NWKar. [kʰla-] 'to wish' the south-western equivalent of which is [kle-] id. (KarRPS 327). At first glance, it might seem that it has undergone a *kle- > kʰla* shift. The explanation is, however, somewhat more complex.

This verb originally had the sound *kile-* (cf. *kile-* and *kle-* in KarRPS) and was shortened into *kle-*. The longer form, however, was not eliminated; both *kile-* and *kle-* were used simultaneously. As a next step, due to the harmony shift, *kile-* changed into *kila-*, which influenced the phonetic shape of *kle-* and resulted in a *kle- > kʰla-* change by analogy with *kile- > kila-*. This is supported by philological data, cf. the form *kle-* used in the Bible translation presented below (parashah Bo, line no.: 10, 11, 24, 36, 80, 235, 275).

Esther (373 r^o – 385 v^o) into north-western Karaim. The manuscript is stored in one of the smaller private archives in Warsaw (it was catalogued under catalogue number III-73), the owner of which wants to remain, for the time being, anonymous.

The copyist of the manuscript was Simcha ben Chananiel (died in the 1720s), the second hazzan in Kukizów (a community founded in 1688) from 1709 until the 1720s, a prominent copyist of Hebrew manuscripts (see Kizilov 2009: 53, 378). From other manuscripts we know that Simcha's father Chananiel was from Derażne (a small community 6 miles from Lutsk, see Mann 1931: 581).

According to the Hebrew annotation we find in folios 340 v^o – 341 r^o, the first part of the manuscript, the Torah, was copied in the period between 15th of Adar Sheni of the year 480 of the minor era and the 23rd of the month Iyar (i.e. from 25th March until 31st May 1720). The last 44 folios were copied somewhat later, by the same hand.⁶

This manuscript contains the oldest known Bible translation into Western Karaim (for an overview of the known translations, see Jankowski 2009: 506 and Olach 2013: 6–10).⁷

3. The harmony shift

3.1. Introductory remarks

From a linguistic point of view, the particular chapters in themselves are consistent. The language of the manuscript as a whole, however, is not consistent (see 3.3 below) even though it was beyond any doubt copied by the same person. This suggests that the copyist worked on translations made by different persons in different periods of time and that the manuscript's language does not reflect his idiolect. Importantly, however, the whole manuscript exhibits, in the respective suffixes, *j* in place of the etymological **η*, with no exceptions, which makes an instant preliminary dialectal affiliation possible: it was written in north-western Karaim.

What makes the language of the manuscript heterogeneous is the distribution of the vocalisation signs standing, on the one hand, for *e*, i.e. *tzere* (◌ֿ) and the seldom used *seghol* (◌ֿֿ), and, on the other hand, for *a*, i.e. *pattāḥ* (◌ֿֿֿ) and *qāmātz* (◌ֿֿֿֿ). The use of these four vowel points is crucial in view of the description of the harmony shift. This is because in the north-western Karaim manuscripts the distinction between *e* and *a* was the only one between front and back vowels that was reflected in writing: labial *ö* and *´o* were written in the same way, with the letters *yodh* and *waw* combined with a *ḥōlām* (word-initially supplemented with *aleph*), i.e. ⟨יֿ(א)⟩. Mutatis mutandis, labial *ü* and *´u* were not distinguished in writing, either, both were written with the letters *yodh* and *waw* with a *shūrūq* – word-initially introduced with the letter *aleph*, i.e. ⟨יֿ(א)⟩.

⁶ These folios follow the colophon that contains the aforementioned date of the copying and ends the translation of the Torah. My hearty thanks go to Prof. Piotr Muchowski (Poznań) for his help in deciphering the date of the writing of the Torah translation.

⁷ It might be that the copy is not much older than the translations themselves, given that the beginning of the Western Karaim Bible translation tradition dates back to the early 18th century at the earliest (see Zajązkowski W. 1980: 162). Such a view must remain, however, speculative.

Moreover, the palatalisation of consonants was never noted separately, with the sole exception of the position before *ʾa* where the palatality was indicated by the letter *yodh*.⁸ It is true that in north-western Karaim the letter *yodh* was also used to indicate the palatalisation of the consonant before *ʾo* (< **ö*) and *ʾu* (< **ü*), but based on the combined use of the letters *yodh* and *waw* mentioned above it is not possible to determine whether in a specific example the letter *yodh* denotes the frontness of *ö* and *ü* or rather the palatality of the consonant standing before *ʾo* and *ʾu*.

The orthographical distinction between the letters *koph* <ק> and *kaph* <כ> cannot be of help in this case since the harmony shift did not affect the writing in this respect. Before this period, the letter *koph* had been used in a back-vowel environment whereas *kaph* had been used in combination with front vowels (with some exceptions in Slavonic and Hebrew loanwords). Later on, this distinction was transposed to the distinction between *k* and *k̄*, i.e. the distribution of these letters remained much the same (for a concise presentation of the north-western Karaim orthography based on Hebrew script see Zajączkowski A. 1934). The orthographical distinction between *ś* written with the letter *shin* <ש> and *s* with *samekh* <ס> we know from south-western Karaim texts which are not older than the last decades of the 18th century (see Németh 2014b), and it was not applied in north-western Karaim.⁹

The orthography of the whole manuscript is highly consistent, although it is not free from minor irregularities.

3.2. Writing *e* vs. *a*

As far as the use of the vowel points standing for *e* and *a* is concerned, the manuscript presents a complex image. The translation of the Five Books of Moses (i.e. folios 3–341) is vocalised in a way that points to a simultaneous operation of both vowel and consonant harmony, with a clear dominance of forms in which it is the vowels that agree with each other.¹⁰ This shows that the text was authored in a transitional period, when the harmony shift was still an ongoing process (i.e. the vowel harmony was still operating, although having been already disrupted). This can be corroborated by the quite telling simultaneous use of both types of harmonization, good examples being *birgeje* בִּרְגֵיִא, בִּרְגֵיִיא (Yitro 46, 49, 95, 138; Bo 235) vs. *birgeja* בִּרְגֵיִא (Yitro 61), *bizge* בִּזְגֵיִא (Bo 22) vs. *bizga* בִּזְגֵיִא (Bo 32), *etme* אֵיטְמֵיִא (Yitro 37; Bo 77) vs. *etrma* אֵיטְמֵיִא (Yitro 32), *jerinde* יֵרִינְדֵיִא (Bo 67, 149) vs. *jerinda* יֵרִינְדֵיִא (Bo 51, 93, 97, 101, 110, 115, 142, 143, 191), etc. The number of such word pairs is considerable.

Even though the number of “mixed” forms is relatively high (see Table 1 below), they are clearly outnumbered by forms that are vocalised in a way that these forms must

⁸ This phenomenon is well known from north-western and south-western Karaim texts, see e.g. Zajączkowski A. (1934: 184ff), Németh (2011a: 124).

⁹ The latter rule had no justification in north-western Karaim for it would have blurred the distinction between *ś* (noted with *shin*) and *s* (noted with *samekh*).

¹⁰ Due to the limitation of space, a critical edition of a sample text from this part (the parashah Yitro) will be presented in a separate article (Németh 2014a).

have sounded prior to the harmony shift. And thus, for instance, the ratio of *e* to *'a* in parashahs Bo and Yitro is, respectively, 423 to 86: in parashah Bo it is 247 to 61, i.e. 25% of the forms in question contain *'a* in lieu of the original **e*, whereas in parashah Yitro this ratio is 176 to 25, which means that 14% of the relevant forms bear traces of ongoing harmony shift. Other fragments of the Five Books of Moses paint a very similar picture.

The most frequently used vowel point for *a* (both *a* and *'a*) is *qāmātz*, whereas *pattāḥ* is used rarely and interchangeably with *qāmātz*, as e.g. *sendān* written as סֵנְדָּן and סִנְדָּן. Very rarely, *'a* is noted without the expected yodh, only with a vowel point, although I have noticed this only in one word, in *berdīlar* בֵּרְדִּילָר. The most frequently used vowel point for *e* is *tzere*; much rarer is *seghol* and is used interchangeably with *tzere*, as e.g. in *birgeje* noted as בִּרְגֵּיִא (Yitro 46, 49) and בִּרְגֵּיִא (Bo 235).

Importantly, there is no functional distinction between *qāmātz* and *pattāḥ* on the one hand, and *tzere* and *seghol*, on the other. The use of *seghol* instead of *tzere* or *pattāḥ* instead of *qāmātz* is not motivated either by phonetic, phonological or accentual features. Using these vowel points interchangeably was standard practice in Western Karaim generally (see e.g. Németh 2011a: 101–102, 106, 108, 115, 123; Olach 2013: 25, 31).¹¹

At the same time, all fragments other than the Five Books of Moses (the last 44 folios) reflect the use of vowel points based on regular consonant harmony. As I mentioned above, this shows that the whole manuscript reflects not the copyist's idiolect but it is more likely that he had slavishly copied other sources. A sample text of this part (the Book of Ruth) of the manuscript will also be presented in the near future.

3.3. Transcription

3.3.1 Difficulties

One major factor makes compiling a fully satisfactory phonemic transcription extremely difficult or even impossible. Since the text originates from a transitional period between the “eras” of vowel harmony and consonant harmony, the emerging phonemic oppositions overlapped with the original phonemic oppositions that existed prior to the harmony shift. As a result of this, one system of phonemic transcription would be needed to cover two different systems of phonemes.

It is impossible to employ the phonetic transcription I used in my previous articles devoted to 19th-century Western Karaim texts as the reconstructed phonetic representation of the linguistic material would be far more hypothetical here.

¹¹ This corresponds with what we have in the so-called ‘Sphardic’ Hebrew and, in general, in the traditional pronunciation of Hebrew among north-western Karaims, where there was no difference in the realization of the *qāmātz* and *pattāḥ* vowels (both were read as *a*), and similarly *tzere* and *seghol* (as well as *shewa* in its basic realisation) were pronounced as an one and same *e* vowel (see e.g. Harviainen 1992: 184, 2013: 455). Consequently, in Karaim these vowel signs could be used without distinction, too. I thank one of my anonymous reviewers for this pertinent observation.

Using a transliteration would eliminate the difference between *i* and *y*. On the other hand, using a transliteration would also force upon us a completely unnecessary distinction between the use of *tzere* and *seghol* standing for the same *e*, as well as between *pattāḥ* and *qāmātz* used to denote *a*.

The difficulty in compiling a satisfactory phonemic transcription arises from the uncertain phonemic status and phonetic value of several sounds:

First of all, we cannot say with certainty what the actual pronunciation of the non-initial original front labial *-ō-*, *-ü-* was at the time the text of the Torah was translated and copied. We do not know whether the *-ō- > -'o-*, *-ü- > -'u-* process operated simultaneously with the *e > 'a* change or if it ended before the *e > 'a* shift, and whether there was an *-ō- ~ -'o-* and *-ü- ~ -'u-* alternation (similar to *e ~ 'a*) at the time the text was copied or written. Consequently, we cannot determine which opposition should be displayed in the transcription: (1) the *ö : o*, *ü : u* opposition, or (2) the opposition of *ö- : o-*, *ü- : u-* in the word-initial position combined with contrasting *-ō- : -'o-*, *-ü- : -'u-* in the word-medial and word-final positions¹², or (3) both appearing simultaneously. The writing does not preclude any of these scenarios.

Secondly, we do not know which consonants were already palatalised at the time the text was written and what their actual phonetic value was in consonant clusters.

Thirdly, a good question is what the phonological status of the palatalised consonants was (of *č*, *đ*, *ǵ*, *ĺ*, *ń*, *ń*, *ř*, *ś*, *ť*, and also *ḃ*, *ḥ*, *ḥ*, *ḥ*, *ḥ*, *ḥ* not attested in the sample material) in the transitional period. Should these consonants be treated as separate phonemes or rather as allophones of their non-palatalised equivalents? If the latter is true, then another question arises: should they be classified as free-variant allophones (see the *e ~ 'a* alternation in the same phonetic environment) or rather as complementary ones (for they occur only in front of certain vowels)? Fortunately for us, however, we can leave the latter question to language theoreticians.

Another question is: what was the actual phonemic status of the sound represented by the letter *koph* (פ) in the syllable-closing and suffix-initial position? We know that [q] evolved eventually into [χ] in these positions in this dialect, but it is not yet possible to determine when exactly this process took place. The youngest north-western Karaim manuscript I know of in which the *q > χ* change is reflected in writing is manuscript III-68 (stored in the same collection as III-73) from 1881–1882.

3.3.2 The chosen solutions

Eventually, in my transcription I decided to use *ö* and *ü* in every position – including word-medially even though the idea there could have existed, at least an *-ō- ~ -'o-* and *-ü- ~ -'u-* alternation should not be dismissed.

Secondly, it is most likely that at the time the Torah was translated, at least the consonants that precede the *a* that comes from the original *e* were already palatalised, cf. the additional *yodh* used for indicating *'a*; *אָ* and *א* used respectively for *'a* and *a* were consistently distinguished throughout the whole manuscript.

¹² Due to phonotactic restrictions in the word-final position it is only the *ü : 'u* opposition that is relevant here.

I decided, therefore, to indicate the palatality of consonants in these positions in order not to lose this important feature in the transcription. I consider this solution also acceptable because such segments as e.g. *da* vs. *ďa* already resemble the phonemic opposition of palatalised and non-palatalised consonants we know from Modern North-Western Karaim. I will not indicate the palatality of other consonants (e.g. *k*, *g*, *l*) in front of front vowels as this feature seems to be of rather phonetic than phonological nature.¹³

Lastly, I will use *-q* for transcribing the sound represented by the *koph*.

3.4. Examples for the ongoing harmony shift

The ongoing harmony shift is exemplified by the data in Table 1 collected from parashah Bo of manuscript III-73.¹⁴ The table contains only those forms that bear traces of consonant harmony. Most of these forms have alternating variants with vowels corresponding to the rules of vowel harmony.

Line no.	In manuscript III-73	In the original orthography	The form prior to harmony shift	Present-day form ¹⁵
6	Micridá (× 3)	מִצְרִידָא	Micride	[Míćrída]
18	körmejdílar	כּוֹרְמֵיִדִּילָר	körmejdiler	[kórmađilar]
23	tenrisińa	טֵנְרִיסִינְיָא	tenrisine	[teńrísina]
28	tenrisijizǵa	טֵנְרִיסִיִּזְגָא	tenrisijizge	[teńrísijizǵa]
32	bizǵa	בִּיזְגָא	bizge	[bízǵa]
33	birgejizǵa	בִּרְגֵיִזְגָא	birgejizge	[bírǵajizǵa]
35	jigitlar (× 2)	יִגִּיטְלָר	jigitler	[jígítlar]
37	Mošéǵa (× 2)	מוֹשֶׁגָא	Mošege	[Mošéǵa]
41	üstüńa	אִוְסְטִוְנְיָא	üstüne	[uštuńa]
46	čegindá (× 2)	צֵיגִינְדָא	čeginde	[čéǵindá]
51	kögütündá	כּוֹגִיטִוְנְדָא	kögütünde	[kóǵutúńda]
51	jerindá (× 9)	יֵרִנְדָא	jerinde	[jerińda]

¹³ This problem is closely connected with the question how the consonant harmony has developed (see 4.3 below).

¹⁴ In this article I will quote examples from parashah Bo: folios 99 r^o – 105 v^o, lines 1–85 = Ex 10:1–29, lines 85–114 = Ex 11:1–10, lines 114–244 = Ex 12:1–51, lines 244–282 = Ex 13:1–16, and from parashah Yitro: folios 113 v^o – 117 v^o, lines 1–73 = Ex 18:1–27, lines 73–142 = Ex 19:1–25, lines 142–189 = Ex 20:1–23). I will not repeat examples that occur more than once in a text (the number of their occurrences is indicated in brackets without the line numbers being additionally mentioned).

¹⁵ The present-day forms in this column may differ from the actual pronunciation of Karaim native-speakers in the light of existing idiolectal differences. This column therefore contains forms that merely correspond with the consonant harmony model.

Line no.	In manuscript III-73	In the original orthography	The form prior to harmony shift	Present-day form ¹⁵
55–6	tenrijizǵa	טַנְרִיזִיזְגָא	tenrijizge	[teńrijizǵa]
64	köklerǵa (× 2)	כּוֹכְלֵרְגָא	köklerge	[køkłarǵa]
76	birgemizǵa	בִּרְגֵמִיזְגָא	birgemizge	[birǵemizǵa]
77	tenrimizǵa	טַנְרִמִּיזְגָא	tenrimizge	[teńrimizǵa]
82	özüja	אִזְזִיזְיָא	özüje	[özüja]
83	künüjǵa	כּוּנִיזְזִיזְגָא	künüjde	[kuńujǵa]
85	körma	כּוֹרְמָא	körme	[kørma]
88	tügeliča	טִיזְזֵלִיזְכָא	tügeliče	[tuǵaliča]
93	közlerinda (× 3)	כּוֹזְלֵרִינְדָא	közlerinde	[køkłarinda]
96	kečeda	כּיזְכֵדָא	kečede	[kečađa]
104	kišidan	כּיזְשִדִין	kišiden	[kišidań]
106	enirǵar	אֵנִירְלֵר	enerler	[eńarǵar]
118	kününda	כּוּנִיזְזִינְדָא	kününde	[kuńuńda]
119	özlerińa (× 2)	אִזְזֵלֵרִינְיָא	özlerine	[özłarina]
125	ečkilerdan	אֵזְכִילֵרְדִין	ečkilerden	[ečkilarďań]
160	kensisinda	כּינְסִיזְינְדָא	kensisinde	[kenšisinda]
165–6	üvlerijizǵa	אִיזְזֵלֵרִיזְזִיזְגָא	üvlerijizde	[üvłarizizǵa]
174	ešigindan	אֵזְשִיגִינְדִין	ešiginden	[ešigindań]
179	üvlerijizǵa	אִיזְזֵלֵרִיזְזִיזְגָא	üvlerijizge	[üvłarizizǵa]
201	köra	כּוֹרְיָא	köre	[kørä]
208	tüvünčüklen-genǵar	טִיזְזֵבִיזְזֵנְצִיזְזֵכְלֵינְגֵנְלֵר	tüvünčüklen-genler	[tuvuńčukłan-ǵańlar]
212	berdiǵar	בִּירְדִילֵר	berdiler	[berďilar]
216	birgelerińa	בִּרְגֵלֵרִינְיָא	birgelerine	[birǵalarina]
217	biširdiǵar	בִּישִירְדִילֵר	biširdiler	[biširdilar]
218	Micridan	מִצְרִיזְדִין	Micriden	[Micridań]
222	aǵerindan	אֵזְזֵרִינְדִין	aǵerinden	[aǵerindań]
234	tirilša	טִירִלְשָא	tirilse	[tirilša]
244	jerindan	זֵרְנִינְדִין	jerinden	[jerindań]
254	berma	בִּרְמָא	berme	[berma]
257	künda (× 2)	כּוּנְדָא	künde	[kuńda]
273	sendan	זֵסִינְדִין	senden	[šendań]

Table 1. Words with disrupted vowel harmony in parashah Bo of manuscript III-73

3.5. Rules and tendencies

Based on the analysed manuscript the following additional observations are valid:

1. There are no three-syllabic or longer forms that would contain more than one *e* > 'a change, i.e. there are no three-syllabic or longer forms that would be entirely assimilated.
2. In words longer than two syllables the *e* > 'a change occurs in the final syllable only, which might suggest that the process started in this position and gradually spread to non-final syllables. This is supported by the fact that first-syllabic *e* has remained unchanged until the present day (cf. our conclusions below).
3. The *e* > 'a change only occurs in suffixes and primary postpositions, namely:
 - in case suffixes, i.e. in ablative, dative, and locative case suffixes, both after possessive suffixes and in forms without them; all other case suffixes, i.e. the genitive *-nyn* and the accusative *-ny*, do not contain **e*;¹⁶
 - in the equative suffix *-če* > -č'a;
 - in the *-me* > -m'a derivative suffix;
 - in the plural suffix *-ler* > -l'ar, both in nominal and verbal forms;
 - in the conditional mood suffix *-se* > -s'a;¹⁷
 - in the postposition *köre* > k'óra [or k'óra];¹⁸
4. The *e* > 'a change operated much more intensively in the locative and ablative case suffixes (*-de* > -d'a, *-den* > -d'an) than in the dative case suffix (*-ge* > -g'a), cf. Table 3 below. This, combined with the fact that *g* and *k* were most probably palatalised in front of *e*,¹⁹ allows us to assume that:
 - the *e* > 'a shift first operated preferably after non-palatalised consonants;
 - after the palatalised complementary variant of *g*, i.e. after [ǰ] in the segment *g* + *e*, the above process was somewhat held back. See Table 2 and our additional remark in 4.3 below.

¹⁶ The *byla* '(postposition) with ' > -ba ~ -b'a change that led to the emergence of the instrumental case is a much later tendency.

¹⁷ In fact, these are almost all north-western Karaim suffixes in which a word final syllable with **e*(-) > *-'a(-) may occur. At the same time these suffixes appear to be the most frequently used. The suffixes which have no post-harmony-shift variants or no variants at all attested in the sample material are as follows: the *-gen* perfect participle suffix, the *-(š)eri* suffix for distributive numerals, the *-me* suffix introducing negation, the *-ginče* converb suffix, the *-gej* optative marker, the *-el* abilitive mood marker, and the *-de* particle introducing negation. Among these, only *-gen* appeared in the sample material in the word-final position. The negative suffix appeared in several instances, but not in a word-closing position. There are far fewer verbal forms with an *[e] > [a] attested, but this is rather because there are far fewer verb-closing suffixes with **e* in the last syllable.

¹⁸ All other north-western Karaim primary postpositions do not contain **e*, see Németh (2011b: 103–104).

¹⁹ According to Turkic phonotactics *g*, *k*, *l* are often palatalised in front of *e* (Räsänen 1949: 148ff.). Since this feature appears in both dialects of Modern Western Karaim, it is very possibly an inherited feature.

		<i>d + e</i>	<i>d + 'a</i>	<i>g + e</i>	<i>g + 'a</i>
Parashah Bo	Locative	27	25		
	Ablative	21	7		
	Dative			43	10
	Other	11	–	16	–
	Total	59	32	59	10
Parashah Yitro	Locative	9	4		
	Ablative	5	10		
	Dative			37	4
	Other	3	–	8	–
	Total	17	14	45	4

Table 2. The number of forms with the **e* > '*a* change attested after /d/ and /g/ in syllables where this change could have occurred

Such forms as e.g. *körmejdīlar* (Bo 18) show that the *e* > '*a* change was not related to the accent; the accent usually falls on the last syllable, with the exception of negative verbs (among other exceptions), in which it is the syllable that precedes the negative suffix which is stressed, i.e. in this case the first syllable (i.e. *kör-*) takes the accent.

The presence of labial vowels seems to have had no catalytic effect on the *e* > '*a* change, see e.g. *köčtüler* (Yitro 76), *körünmesin* (Bo 258, 259), *künde* (Bo 156, 157; Yitro 75, 101, 116, 165), *kününde* (Bo 126, 163), *sözüne* (Bo 209; Yitro 64), *tüvünčüklen-genlar* (Bo 208), *üstüne* (Bo 19, 38, 39, 45, 87, 99, 128, etc.), *üvretüv* (Bo 238), *üvretüv-lerin* (Yitro 44). This might suggest that the depalatalisation of *ö*, *ü* did not take place prior to the time the manuscript was written (in comparison, the elimination of front labials in the south-western dialect of Karaim took place much later this Tora translation was copied in the last decades of the 18th century, see Németh 2014b).

4. Conclusions

4.1. Transitional period not transitional dialect

There is a general consensus that phonetic changes do not operate instantly and that there is always a transition period in which both variants, i.e. original forms and innovative ones coexist with one another. In my opinion, such a transitional stage in north-western Karaim is evident in the analysed manuscript, at least as far as the harmony shift, more precisely the *e* > '*a* change, is concerned.

Such an explanation seems much more plausible than assuming that words that contain both front and back vowels reflect dialectal interference between north- and

south-western Karaim, even if we agree that the Karaim community in Kukizów would be a perfect place for such inter-dialectal influences as it was inhabited by families that moved from Trakai (six families in 1688) and Halych (three families in 1692) in the last two decades of the 17th century (see Gąsiorowski 2000: 75–77, 2008: 192).

There are several arguments that make interpreting these “mixed” forms as a result of dialectal interferences improbable. Firstly, the *e* > *ʼa* change occurs in final syllables only, which corresponds with the first-syllabic *e* that did not take part in the harmony shift at all and shows that the process being described here was a natural process and not a result of the “uncontrolled” interference of south-western Karaim. Secondly, the idea that the language of the text is, in fact, south-western Karaim with the (**ŋ*) > *n* replaced by *j* and with the consonant harmony being gradually introduced does not hold water: this explanation would be far-fetched; we would, for instance, expect to find traces of a *n* ~ *j* alternation in this case, similar to the alternation of vowel harmony and consonant harmony. Thirdly, a scenario in which south-western Karaim that influenced the north-western dialect should be dismissed out of hand since the only feature that could have been overtaken was the (**ŋ*) > *n*, which is not there in the text.²⁰ Lastly, all “mixed” forms can be easily explained as archaisms co-existing with their innovative counterparts.²¹

Neither does it seem possible that the text in question was first written in north-western Karaim without vocalisation and later, after the community had dispersed in 1831 (see e.g. Kizilov 2009: 90), the manuscript ended up in Halych, where it obtained a south-western Karaim vocalisation. This scenario, mentioned by Kowalski (1929: xix, 289), must be categorically rejected for two reasons. Firstly, the vocalisation is written in the same ink and with the same writing tool and surely at the same time as the “main” letters were written. Secondly, the vocalisation is clearly not south-western Karaim.

4.2. Chronology

If the above is true, the harmony shift could have probably started to operate around the end of the 17th century or the beginning of the 18th. In certain areas or idiolects it must have ended prior to the 1720s, i.e. before Simcha ben Chananiel’s demise, otherwise he could not have copied the last 44 folios of the translation in clear north-western Karaim with evident traces of fully operational consonant harmony. In this

²⁰ The *ö* > *e* and *ü* > *i* change as well as the *š* > *s* shift characteristic of the south-western dialect we are familiar with from hitherto published works cannot be taken into consideration as these changes occurred in Halych Karaim much later, in the last decades of the 18th century (Halych Karaim texts from the 1770s still have *ö*, *ü* and *š*), see Németh (2014b).

²¹ Since this article is devoted to the question of harmony shift, other linguistic features must be treated marginally. We should, however, at least mention that the verbal forms in the text exhibit the original 1st and 2nd sg. personal endings *-men* and *-sen*, instead of the NWKar. *-myn* ~ *-miiŋ* and *-syn* ~ *-šiiŋ*. In my opinion, this feature should also be treated as an archaic one, instead of interpreting it as a south-western element in the north-western dialect, cf. south-western *-men*, *-sen* (see e.g. Németh 2011b: 32). The phonetic change in these suffixes took place, most probably, in the second half of the 19th century, see Németh (2015).

case the 1720s would be the *terminus ad quem* marking the end of the process in – I must emphasise this again – certain areas or idiolects. Some recent discoveries, however, allow us to improve our conclusions and say that, again, at least in some areas and idiolects, the harmony shift was still an ongoing process.²²

We can certainly say that it must have taken place after the $*\eta > j$ change.

In the future, we must find the answer to the question of whether the harmony shift took place simultaneously in Kukizów and Trakai. The geographic distance between these two communities would suggest that the harmony shift (or even the consonant harmony itself, i.e. the end product of the process) was “imported” to Kukizów from Trakai, which means that the process must have started before 1688, prior to the first wave of Trakai Karaim settlers arriving in this small community. In this case 1688 would be the *terminus ante quem* marking the latest possible date of the start of the process.

Nevertheless, it is obvious that further research is needed to establish the above-mentioned time-frame with greater accuracy. This article can only be considered the first step in this matter.

4.3. How did the consonant harmony develop?²³

The last question I would like to touch upon in this article is: how did the consonant harmony evolve, i.e. can this process be described by identifying step by step the changes that led to the harmony shift? This question was raised by K. Stachowski (2009: 159–160), who presented a general probabilistic model of the harmony shift without, however, having access to texts older than the 20th century. In the present subsection, therefore, I would like to supplement and slightly modify his proposal with the conclusions that flow from the analysis of the recently discovered Torah translation.

Generally speaking, two scenarios are possible:

1. The harmony shift occurred through the shift of the vowels \ddot{o} , \ddot{u} and e to \acute{o} , \acute{u} , \acute{a} , i.e. through a change in which the shift of front vowels to back vowels took place simultaneously with the process of palatalising the consonant preceding them.
2. This happened in two separate steps: **(I)** first all consonants became palatalised in front of front vowels (except for f and χ , these were palatalised only in front of i) and only then, as a next step, **(II)** the $\ddot{o} > o$, $\ddot{u} > u$, $e > a$ changes took place.²⁴

²² The language of a manuscript (catalogued under number III-78; from the same collection as III-73), discovered several months after I had submitted this paper for publication, copied in 1750 (see folios 118 v^o and 251 v^o) shows that in the time it was copied there were still active copyists of north-western Karaim texts whose idiolect reflected an ongoing harmony shift (see our remarks and examples in 4.3 below). Manuscripts from the second half of the 18th century I have seen so far (like e.g. the one catalogued under number JSul.III.05, from the 1780s, stored in the archive of A. Sulimowicz) show no archaic features in this respect, any more.

²³ I owe thanks to Dr. Tomasz Majtczak (Kraków) and Dr. Kamil Stachowski (Kraków) for being the devil’s advocates and fuelling the discussion on the matters below.

²⁴ The scenario in which it is the vowels that shifted first and only then the consonants became palatalised is unfeasible for articulatory reasons.

Ad 1: The following arguments support this scenario, listed in descending order of importance:

- a) There was no $\ddot{o} > 'o-$, $\ddot{u} > 'u-$ and $e > 'a$ change in the initial position, possibly because the palatality could not have been shifted to a preceding consonant in this position.
- b) The $e > 'a$ change operated less frequently after consonants that were already palatalised, i.e. after k and g , possibly also because the palatality could not be shifted to the preceding consonant in this situation. See rule number 4 in 3.5 above.
- c) In the case of consonant clusters it is the consonants that stood directly in front of the original vowels $*\ddot{o}$, $*\ddot{u}$ and $*e$ that were regularly palatalised (see e.g. Kowalski 1929: lxxiv). The status of all other consonants varied idiolectally.

Ad 2: The following arguments support this scenario, listed in descending order of importance:

- a) All consonants in those front harmonic words that did not contain any of the three vowels that lost their frontness (i.e. \ddot{o} , \ddot{u} and e in non-initial syllable), but contained only e in the first syllable and i in any position, also became palatalised, cf. MNWKar. [*těńgiz*] 'sea' (not $*tengiz$), or [*śeń*] 'you' (not $*sen$).²⁵
- b) The number of palatal consonants may have been higher than it is usually experienced in the Turkic languages just before the harmony shift started to operate: firstly, some of the consonants in some positions were in all probability palatal before the harmony shift began (this is true above all for k , g and l). Secondly, the number of palatal consonants may have been additionally increased due to the influence of the surrounding Slavonic languages (above all Polish and Russian) and Lithuanian in which consonants are often palatal in front of front vowels.²⁶

It is rather difficult to come up with conclusive arguments that would enable us to choose one of these scenarios, however, the second appears slightly more possible. At the same time, it seems likely to say that the process was somewhat more complex than the models presented and a description of harmony shift should contain elements of both of them. We could, for instance, assume the following model (this concerns, obviously, only words which were originally not back-harmonic):

²⁵ Theoretically, this could have happened due to analogical levelling, i.e. the palatality of the suffixes could have influenced the stem in the nominative. In other words, this process could have occurred as a result of the following steps: $*\{sen : senden\} > *\{sen : sendan\} > *\{sen : seńdan\} > *\{sen : seńdan\} > \{seń : seńdan\}$. See, however, our argumentation below (especially for $-ń$).

²⁶ The latter is one argument that suggests that the entire process was induced by the influence of the languages surrounding north-western Karaim. Another argument that makes such an external influence plausible is the fact that these languages, i.e. the Slavonic languages and Lithuanian, lack the front labial \ddot{o} , and \ddot{u} , too (even though this argument is weakened by the fact that \ddot{o} and \ddot{u} remained intact in the word-initial position). Lastly, in north-western Karaim, the number of word-initial y -s has been reduced considerably, which also resembles Slavonic and Lithuanian phonotactics.

1. Originally, in north-western Karaim (more precisely: in Western Karaim in general), *k*, *g*, and *l* were palatal in front of the front vowels *e*, *i*, *ö*, and *ü*. The vowel harmony operated “normally”, in a way that is known from other Kipchak languages.
2. In north-western Karaim, the number of palatal consonants has been raised considerably due to the influence of the surrounding languages. At this stage, only those consonants became palatal that were palatal in their respective positions in the languages that influenced Karaim. Consequently, the phonological opposition between front and back vowels became less important and made a shift of front vowels to back vowels possible.²⁷ The harmony shift started to operate. This is the beginning of the transitional period.
3. The shift of the front vowels began first in suffixes (see 3.5) where the phonological opposition of front and back vowels is, in contrast to the vowels in the stem, of lesser importance. The drift started to occur first of all in segments in which palatal consonants appeared in positions unacceptable to the original phonotactics. In other words, after *k*, *g*, *l* this process was somewhat held back. This is attested in the analysed manuscript.
4. The vowels backing gradually expanded towards the beginning of the words and resulted in the automatic palatalisation of the preceding consonants if they had not yet been palatalised.²⁸ Eventually, the process reached the second syllable inclusive, i.e. it did not come to an end: the first syllable was effected in a limited degree only: *e* remained there untouched whereas *ö* and *ü* did not change in the word-initial position.²⁹ The *ö* > *’o* and *ü* > *’u* process must have been reinforced by the lack of a front labial *ö* and *ü* in the interfering languages. This stage eliminated the vowel harmony.
5. Since the quality of the consonants became more important than the quality of the vowels, consonants that were yet not palatalised (**a**) either due to the original Turkic phonotactic rules, (**b**) or due to the Lithuanian and Slavonic articulatory habits, (**c**) or to the shift of front vowels to back vowels, i.e. consonants that were yet not palatalised in word-final position, in word-initial position in front of *e*, and idiolectally in the consonant clusters, became palatal, too, as a result of assimilation (except those mentioned in chapter 1). The consonant harmony was fully operational.

²⁷ For a similar yet not exactly the same process cf. the proto-Polish umlaut, i.e. the **e*, **ě* > *o*, *a* change after palatal consonants (but only in front of dental consonants).

²⁸ This stage is attested in the manuscript mentioned above; in III-78 from 1750. On the one hand, it contains words in which the harmony shift did not occur or it occurred only in the final syllable (in a suffix; this is what we see in III-73), e.g. *tügel* טיִגֵּל (243 v^o), *beslegenda* בֵּיסְלֵגֵנְדָא (243 v^o), *körgüzgeninda* כּוֹרְגִזְגֵּנִינְדָא (243 v^o), but, on the other hand, we find there words in which the *e* > *’a* change took place in non-final syllables or/and in the stems themselves, too, cf. e.g. *klajdlar* כּלַיִדְלֵר (244 r^o), *čebar* צֵיבֵר (244 r^o), *bijančbyla* בֵּיַנְצְבֵּילָא (244 r^o). This means that further researches confirmed our initial conclusions.

²⁹ Interestingly, in the south-western dialect the phonemes *ö* and *ü* have been preserved in the first syllable the longest, too; the *ö* > *e* and *ü* > *i* shift also started to operate in word-final syllables and gradually spread toward the beginning of the words (for further details see Németh 2014b). Were these two phenomena affected by a same cause?

Abbreviations

MNWKar. = Modern North-Western Karaim; **NWKar.** = (present-day) North-Western Karaim

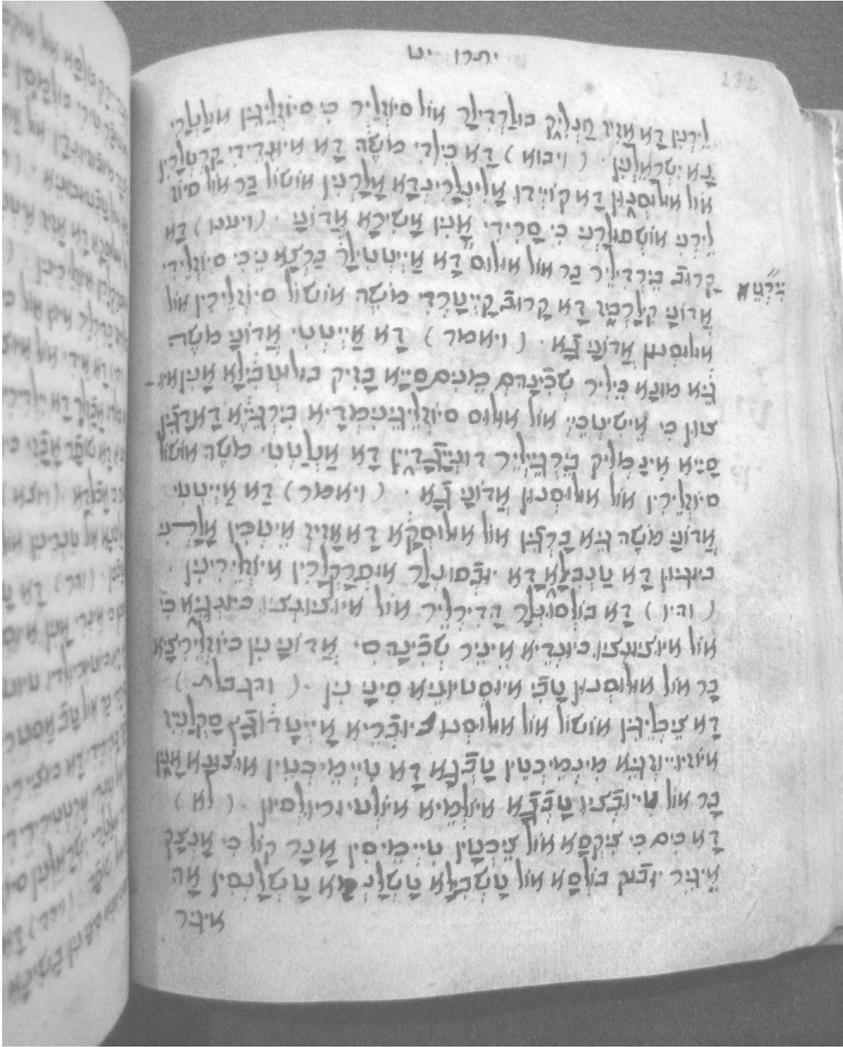
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Facsimile of folio 115 v° of manuscript III-73