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RHYME CORRESPONDENCES
BETWEEN SINITIC AND URALIC LANGUAGES:
ON THE EXAMPLE OF THE FINNISH -*ala* AND -*aja* RHYMES

Abstract. The present study explores rhyme correspondences between Finnic (~ Uralic) and Sinitic languages, taking the Finnish -*ala* and -*aja* rhymes as an example. Two rhyme correspondences are established: (1) Finnish -*ala* ⇔ Mandarin [-(ŭ)ə·n] ⇔ Cantonese [-(ʷ)ɐn·] ⇔ Taiwanese [-u·n]; (2) Finnish -*aja* ⇔ Mandarin [-(ŭ)ɑ·ŋ] ⇔ Cantonese [-(ʷ)ɔ·ŋ] ⇔ Taiwanese [-ǫ·ŋ]. The rhyme correspondences are supplied with ten Sino-Finnic (including Uralic) shared etymological items.

Keywords: Uralic, Finnic, Sino-Finnic, Sinitic, Chinese, etymology, morphophonology.

1. Introduction

A rhyme correspondence is a relatively strict and composite rule of inter-linguistic sound correlations. A rhyme correspondence means that not only a single phoneme but also a composite rhyme is consistently correlated among related lects (i.e. language varieties).

In this article, a rhyme is understood as a morphophonological item consisting of multiple phonemes within a morpheme: nucleus + coda or unstressed consonant in the second syllable + unstressed vowel in the second syllable. This is how rhyme is generally understood by native poets and readers.

Rhyme correspondences exist among closely related lects such as, e.g. the Germanic lects or the Chinese (Sinitic) lects. A well-recognised rhyme correspondence in the Germanic lects is the case of *Einstein* 'one stone': the -*ein* rhyme in German is correlated with the -*een* rhyme in Dutch, the -*one* rhyme in English, and the -*en* rhyme in Swedish and Danish (see Table 1).

In Chinese lects, there are more rhyme correspondences than in Germanic languages. The rhyme correspondences can be practically used to predict word forms of etymological equivalents among Chinese lects.

The present study demonstrates that rhyme correspondences also exist between Sinitic and Finnic (with extension to some other Uralic) languages. It advances the suggestion of the Sino-Finnic (plus Uralic — the term Sino-Finnic is geographically coined, like Indo-Germanic) affinity, which has been previously discussed (e.g. Gao 2005; 2008; 2012a; 2012b; 2012c). I have to

Table 1

Germanic rhyme correspondence of *Einstein* **'one stone'**

Danish	Swedish	English	Dutch	German
en 'one'	*en* 'one'	*one*	*een* 'one'	*ein* 'one'
sten 'stone'	*sten* 'stone'	*stone*	*steen* 'stone'	*Stein* 'stone'
ben 'leg; bone'	*ben* 'leg; bone'	*bone*	*been* 'leg'	*Bein* 'leg'
sken 'shone'①	*sken* 'shone'	*shone*	*scheen* 'shone'	*schein* 'shone'
① Archaic and dialectal.				

admit that previously I have suggested too many Sino-Finnic shared items, some of them erroneous, which jeopardized the whole picture. In the present study, I will only refer to a few very definite items. The keynote is not the quantity but the quality, which means the rhyme correspondences.

2. Material and methods

First, I will include an entry section of comparison of reconstructed languages according to historical linguistics, and then proceed to the main section of etymological and morphophonological comparisons of attested languages.

In the entry section, the fully reconstructed Proto-Uralic (or of a narrower range, Proto-Finno-Ugric) is compared with the partly reconstructed Old Chinese (the roots were attested in the Chinese writing system, their pronunciations have been reconstructed). The sources of the reconstructed forms of the Finnic side are (1) UEW, and (2) Sammallahti 1988. The sources of the reconstructed forms of Old Chinese are (1) Guō 1986/2010, (2) Zhèngzhāng 2003/2013, and (3) Baxter-Sagart 2011.

Proto-Sinitic also known as Proto-Chinese cannot be compared because it is only a theoretical notion without reconstructed results. Proto-Sino-Tibetan cannot be compared because it is a hypothetical notion without a sufficient amount of etymological items representing a sufficient number of languages.

In the main section, a total of six attested languages are comparatively studied: (1) Estonian, (2) Finnish, (3) Livonian, (4) Beijing Yan (Standard Mandarin), (5) Guangzhou Yue (Standard Cantonese), and (6) Taipei Min (Standard Taiwanese). The languages have been chosen for being very representative and relatively well studied.

The chosen languages can be referenced in the following standard or etymological dictionaries, respectively: (1) EES 2012, (2) SSA 2001, (3) LELS 2012, (4) 2011-XHZD, (5) 2003-HKY, and (6) 2011-TWM.

For a better relative comparison, etymological equivalents in some other languages (Uralic and Tibeto-Burman, as suggested by some other scholars) are cited according to the relevant etymological dictionaries UEW and CD5ST (1996). Uncertain etymological equivalents are marked with (?). Non-English glosses have been translated into English for the present study.

The linguistic data of Sinitic lects are given in the IPA (in square brackets). The four basic tonemes are denoted as [A], [B], [C] and [D]. Further tonemes are denoted as [..1] (for *yin* 'lunar' tonemes) and [..2] (for *yang* 'solar' tonemes). All the given Sinitic words are monomorphemic.

The linguistic data of non-Sinitic lects are given in orthographies (in boldface and italic) or transcriptions (in italics, chiefly UPA). If a given word

is longer than one morpheme, the targeted morpheme is underlined (if certain). In Finnic, conditionally apocoped phonemes are given in uppercase. In Finnic and Northern Sami, the alternative stem vowel is given as *i, -e*.

In successive data, dialectal variants are separated by a slash /, while grammatical variants or allomorphs are separated by a backslash \.

In morphophonological analyses, only the IPA is used.

Etymological items are called *etyma*. Chinese etyma are named *DOM*.

The methods of the main section include classical etymology (cf. Rask 1818), and original comparative linguistics (cf. Bopp 1833—1852).

3. Results and discussion

3.1. The etyma shared by reconstructed languages

Ten shared etyma between Sinitic and Uralic languages are supplied to the rhyme correspondences in this article. Their comparisons across the reconstructed languages are given in Table 2.

Table 2

The shared etyma across reconstructed languages

DOM	Proto-U/FU (UEW)	Proto-U/FU (Sammallahti)	Old Chinese (Guō)	Old Chinese (Zhèngzhāng)	Old Chinese (Baxter-Sagart)
【蘊】	*ala* 'under'	*ɨlǻ* 'under'	*ĭ̌ŭ̯ən* 'accumulate' [蘊積也]¹	*qun(; -s) 'accumulate'	*ʔunʔ(; -s) 'accumulate, block up'
【鯤】	*kala* 'fish'	*kǻlǻ* 'fish'	*kŭ̯ən* 'big fish' [大魚]	*kuun 'big fish'	–
【分】	*pala* 'bit; bite'	*pǻlǻ-* 'bite'	*pĭ̌ŭ̯ən* 'divide' [別也]	*puun 'divide'	*pən 'divide'
【焚】	*paĭa-* 'burn'²	–	*bĭ̌ŭ̯ən* 'slash-and-burn' [焚燒田也]	*bun 'slash--and-burn'	–
【損】	*sala-* 'hide, steal; thief'	*sǻlǻ-* 'steal'	*sŭ̯ən* 'diminish' [減也]	*sqʰuunʔ 'diminish'	*s-qʷˤənʔ 'diminish, damage'
【渾】	*wala-* 'pour'	–	*ɣŭ̯ən* 'flowing sound' [混流聲也]	*guun 'flowing sound'	*gˤur 'chaotic'
【往】	*aja-* 'drive, chase'	*aja-* 'drive, chase'	*ɣĭ̌ŭ̯ɑŋ* 'proceed' [之也]	*gʷaŋʔ 'proceed'	*gʷaŋʔ 'go to'
【硞】	– (*kaja*) – ('echo')	–	*kŭ̯ɑŋ* 'sound of stone' [石聲]	*kʷaaŋ 'sound of stone'	–
【房】	– (*maja*) – ('house')	–	*pĭ̌ŭ̯ɑŋ* 'side-room' [室在旁也]	*baŋ 'side-room'	*Cə-N-paŋ 'side-room'
【荒】	– (*vaja*) – ('lack')	–	*xŭ̯ɑŋ* 'desolate' [蕪也]	*hmaaŋ 'desolate'	*m̥ˤaŋ 'weed-covered'

¹ Guō (1986/2010) and Zhèngzhāng (2003/2013) do not include glosses, since the Chinese glyphs can regulate glosses. The glosses for the present study have been drawn either from the first (121-SW) or the second (543-YP) standard dictionary of Chinese. The original glosses in Chinese are cited in square brackets.
² This gloss has been corrected from 'freeze', while the previously suggested etymological equivalents, the Khanty *poj/pǎj* 'thick crust of ice', and Hungarian *fagy* 'frost; freeze', should be rejected.

The data show that most of these ten etyma are comparable across the reconstructed languages. However, I do not consider if it is evidential or not.

These reconstructed forms are always subjected to changes according to attested linguistic data. This is also why different authors have given altered reconstructions for the same targets.

On the Finnic side, some circles may claim that Sammallahti's system is more advanced. On the Sinitic side, no circle accomplishes such a claim. There are more schools that have independently studied the targets and contributed many caveats and arguments. E.g.:

The Peking School, founded by Wáng Lì (1900—1986), now lead by Guō Xīliáng (born 1930) and the Taipei School, found by Li Fang-Kuei (1902—1987), now led by Ting Pang-Hsin (born 1936), insist that words of the same rhyme group of the verses from the Zhou Empire should contain the same nucleus. Younger schools, such as the Shanghai School led by Zhèngzhāng Shàngfāng (born 1933) and Pān Wùyún (born 1943), and the West School led by William H. Baxter (born 1949) and Laurent Sagart (born 1951) suggest that words of the same rhyme group could contain similar nuclei.

The first six shared etyma in Table 2 belong to the same rhyme group of 文 in Zhou verses. If the Old Chinese forms of the Peking School are acknowledged, a rhyme correspondence between Proto-Uralic (of UEW) and Old Chinese (of Guō) can be concluded: Proto-Uralic *-*ala* ⇔ Old Chinese *-ə̆ən. If the Old Chinese forms of the younger schools are acknowledged, no strict rhyme correspondence can be concluded.

The Taipei School, the Shanghai School, and the West School reconstruct liquid medials and initials with heterogeneous consonant clusters (i.e. consonant clusters consisting of consonants of different articulation places) (e.g. the Zhèngzhāng and Baxter-Sagart versions of the fifth etymon in Table 2) according to the Xiesheng series (i.e. sets of Chinese characters sharing the same sound-based elements), the phonologies of Tibeto-Burman languages, and a few doubtful etymological equivalents of Sinitic etyma in some Tibeto-Burman languages. The Peking School denies them, because no Sinitic lect contains such consonant clusters (there are at most prenasalised obstruents that can be considered as homogeneous consonant clusters), and the Xiesheng series might be made up of personal variations across different lects, due to which they cannot be considered as allomorphs in the same lect. Guō (2010 : 21) has emphasised that as the so-called Sino-Tibetan language family is hypothetical and the so-called Sino-Tibetan cognates are problematic it is not reasonable to reconstruct initials with heterogeneous consonant clusters in Sinitic according to Tibeto-Burman. Zhāng (2012) has similarly argued: "[---] the so-called Sino-Tibetan language family is just a unverified hypothesis, [---] with no academic achievements in this area universally accepted by scholars in the linguistic community so far. [---] We cannot identify the basic vocabulary, choose cognate words and reconstruct the phonological system merely out of our imagination."

I think that liquid medials and onsets with heterogeneous consonant clusters should be possible in some source language of some Sinitic etyma. Within Sinitic, it is less possible. Further studies on the colloquial layers of Chinese lects are necessary.

The Taipei School reconstructs absolutely CVC-structured roots, for example, the *-ag rime for the rhyme group of 魚, in order to fit the facts that this rhyme group could often rhyme with the rhyme group of 鐸 (*-ak), thus there is no open syllable in this lect (Li 1971). The other schools reject it because it is typologically unusual. They reconstruct the *-a rhyme for the rhyme group of 魚, and let it rhyme with 鐸 (*-ag/-ak), thus it is not systematic. Li (1971) has argued that rhymed texts do not allow us to reconstruct CV-structured roots that do not rhyme with CVC roots.

I think that the Taipei School has correct facts. However, no one has ever considered the possibility that the poetic rhymes in the Zhou Empire might be not phonological rhymes, but basically unstressed syllables following a stressed nucleus. I have done a primitive sketch of my ideas at the early stage of my studies (Gao 2008 : 128): All Ancient Chinese roots should be disyllabic and CVCv-structured. In rhymed texts, *-a can easily rhyme with *-ga (/g/ can be either [g] or [k]). To most Chinese linguists, it looks systematic but surprising, because my etymological evidence was largely collected from Germanic and Uralic languages. Recently, based on newly identified etymological equivalents between CVC literary roots and CVCv colloquial roots within Sinitic lects, together with consideration of CVCv roots in Sino-Japanese, I have proved that Chinese roots should be disyllabic and CVCv-structured (Gao 2013).

In summary, my opinions on Chinese panchronic phonology are closer to the Peking School. However, I deny the reconstructions of onsets of Old Chinese. I insist that Old Chinese, or more objectively, the national language of the Zhou Empire, was just one of the Sinitic lects at that era. Moreover, it should be restricted to the Zhou Empire (ca 1050 — 256 BC). Later phonetic clues from the Han Empire (202 BC — 220[263] AD) cannot be used for the Zhou lect, because there is no evidence to prove that the Zhou lect and the Han lect were phonetically identical. If different lects are reconstructed together, it is not Old Chinese but a demo of Proto-Sinitic. Returning to Finnic, one reason for my having to proceed with the comparison of attested languages is that many native Finnic etyma (like the last three in Table 2) are lacking from the reconstructed languages. The etymological sources of these Finnic etyma are so far uncertain, and should be studied in the domain of etymology.

Etymologists used to study etymological equivalents in different languages ever before modern linguistics was born. Modern comparative linguists may question the quality of classical etymological studies, but they cannot deny the history of language sciences. Correlated languages cannot be identified without classical etymological studies.

I do not insist that classical etymology has nothing wrong with it, but modern linguists should not reject classical etymology merely because it is not impeccable.

In order to improve the quality of etymological studies, regular sound changes or correspondences should certainly be taken into account. In the following paragraphs, I will demonstrate some rhyme correspondences that are more evidential than simple regular sound correspondences of single phonemes.

3.2. Sino-Finnic rhyme correspondence: Finnish -*ala* ⇔ Mandarin -(ŭ)ə·n ⇔ Cantonese -(ʷ)ɐn· ⇔ Taiwanese -u·n

The -*ala* rhyme in Finnish (the same in Estonian, -*alā* in Livonian) is correlated with the [-(ŭ)ə·n][3] rhyme in Beijing Yan, the [-(ʷ)ɐn·] rhyme in Guangzhou Yue, and the [-u·n] rhyme in Taipei Min. See Table 3.

Table 3

Sino-Finnic rhyme correspondence: -*ala* ⇔ -(ŭ)ə·n ⇔ -(ʷ)ɐn· ⇔ -u·n

DOM	Estonian	Finnish	Livonian	Beijing Yan	Guangzhou Yue	Taipei Min
【蘊】	*ala* 'ground'	*ala* 'ground'	*alā* 'down'	[ʔ ̆ỹə·n ˅][(C)] 'exist underground'	[wɐn ˦][(C1)] 'exist underground'	[ʔu·n ˅][(C1)] 'exist underground'
【鯤】	*kala* 'fish'	*kala* 'fish'	*kalā* 'fish'	[kʰ ̆ŭə·n ˥][(A1)] 'big fish' (obsolete)	[kʰwɐn·˥][(A1)] 'big 'fish' (obsolete)	[kʰu·n ˥][(A1)] 'big fish' (obsolete)
【分】	*pala* 'piece'	*pala* 'piece'	*palā* 'piece'	[fə·n ˥][(A1)] 'divide; piece'	[fɐn·˥][(A1)] 'divide; piece'	[hu·n ˥][(A1)①] 'piece'
【焚】	*palav*② 'hot'	*pala-* 'burn'	*palā-* 'burn'	[fə·n ˩][(A2)] 'burn (entirely)'	[fɐn ˅][(A2)] 'burn (entirely)'	[hu·n ˩][(A2)] 'burn (entirely)'
【損】	*sala* 'secretly'	*salaS-* 'conceal'	*salā* 'secret'	[s ̆ŭə·n ˩˅][(B)] 'damage; diminish'	[sy·n ˩][(B1)③] 'damage; diminish'	[su·n ˥˩][(B)④] 'diminish'
【渾】	*vala-* 'pour'	*vala-* 'pour'	*valā-* 'pour'	[x ̆ŭə·n ˩][(A2)] 'mix (liquid)'	[wɐn·˥˩][(A2)] 'mix (liquid)'	[hu·n ˩][(A2)] 'mix (liquid)'

① (CL⁴)[pu·n ˥][(A1)] 'divide'. ② *põle-* 'burn'. ③ shifted from [sʷɐn·˩][(B1)]. ④ (CL) [sn̩·˥˩][(B)] 'damage'.

About their etymological equivalents outside Sinitic and Finnic:

【蘊 (*yùn*/*uấn*/*ala*/*ala*)⁵】 has also been identified in many other Uralic languages (⇐ Sino-Finnic): Lappic *vuollel* 'under', *vuolē*/*vī̲ᵢlle* 'lower part', *vī̲ᵢlne*/*vū̲ᵢln*/*vueᵢln*/*voᵢln* 'under'; Mordvin *al* 'nether', *alo*/*ala* 'under'; Mari *ül-*/*ülö-* 'nether', *ülnə*/*ülnö* 'under'; Udmurt *ul* 'nether', *ulịn*/*ulîn* 'under'; Komi *ulịn*/*uvịn* 'under'; Mansi *jalə·n*/*j ̃ōln*/*jalən*/*jalən* 'below'; Khanty *ịl*/*it*/*il* 'nether'; Hungarian *al-* 'sub-'; Nenets *ŋịl-*/*ŋịr-* 'nether', *ŋilna* 'under'; Enets *iδo*/*iro* 'bottom', *iδone* 'under'; Nganasan *ŋilea* 'nether', *ŋileanu* 'under'; Selkup *îîl*/*îl*/*î·l* 'bottom'; Kamas *jildə* 'downwards'; Yukaghir -*al* 'under'. It has not been identified in Tibeto-Burman languages.

【鯤 (*kūn*/*côn*/*kala*/*kala*)】 has also been identified in many other Uralic languages (⇐ Sino-Finnic): Lappic *guoli*, -*e*/*kuollē*/*kī̲ᵢlle*/*kū̲ᵢll*/*kuoᵢll* 'fish';

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[3] In Beijing Yan, the vocalic medial [̆ịˎ], [̆ŭ], or [̆ỹ] is extra-short, phonologically [ʲ], [ʷ], or [ᶣ], and belongs to the onset.

[4] Some Chinese lects have two distinct layers: The colloquial (白讀) layer (CL) must be a substratum of an ancient local lect, while the literary (文讀) layer (LL) must have been formed by a later arrived lect. There are sometimes also semantic differences between the LL and CL forms. Not all etyma retain CL forms.

[5] This is a particular DOM (Chinese etymon) chain. It is headed by a Chinese glyph. The denoted etymological equivalents are, in the fixed order, Pinyin, Sino-Vietnamese, Estonian and Finnish.

Mordvin *kal* 'fish'; Mari *kol* 'fish'; Mansi *kōl/χūl/kul* 'fish'; Khanty *kul/χuť/χul* 'fish'; Hungarian *hal* 'fish'; Nenets *χāľe/kāŕe* 'fish'; Enets *kaδe/kar^e/kare* 'fish'; Nganasan *kole/kuale/kuəlle* 'fish'; Selkup *kel/qel/qeli/ķuel/qēḷi̧* 'fish'; Kamas *kola* 'fish'; Mator *kele* 'fish'. It has not been identified in Tibeto-Burman languages.

〖分 (*fēn/phân/pala/pala*)〗 has also been identified in many other Uralic languages (⇐ Sino-Finnic): Lappic *buola/pŭ̆ə̆ĺĺ^e* 'piece' (dated); Mordvin *pal* 'piece of meat / meat'; ?Mari *pultϑš* 'piece of meat'; ?Komi *palak* 'layer; piece'; Mansi *pōl/pūl/pulə* 'piece, bite'; Khanty *puḷ/pül/pul* 'piece of food'; Hungarian *falat* 'bite'; Nenets *pāľe-* 'eat, swallow'; Selkup *poli-/pōl-* 'eat / swallow up'. It has also been identified in some Tibeto-Burman languages (⇐ Sino-Finnic, or ⇐ Sinitic): Burmese **pan* 'bite'; Kachin *ban* 'division, part'.

〖焚 (*fén/phần/palav/pala-*)〗 has also been identified in some other Uralic languages (⇐ Sino-Finnic): Lappic *buoli, -e-/puollē-/pī̧lle-/kū̧ille-/puo̧ille-* 'burn', Mordvin *palo-/palϑ̄-* 'burn'. It has not been identified in Tibeto-Burman languages. Its ultimate origin is onomatopoeic, cf. Shenyang Yan [pʰăla·ɬ][A1] 'onomatopoeia for glowing fire'. The irregular output in Estonian, *põle-* 'burn', might be a remainder of another layer that was similar to Selkup that retains the vowel *e̦* [ɤ] for this rhyme. Unfortunately, this etymon has not been identified in Selkup.

〖揁 (*sǔn/tǒn/sala/salaS-*)〗 has also been identified in many other Uralic languages (⇐ Sino-Finnic): Lappic *suola/suola/sī̥ĺ/sūľ/suoľ/sul* 'thief'; Mordvin *salava* 'secret', *sala-* 'steal'; Mari *šolϑ̄* 'thief', *šolϑ̄šta-/šolšta-* 'steal'; Mansi *tōl/mā·nt-/tulmənt-/tulmt-/tūlmant-* 'steal'; Khanty *ḷiḷəγ/jiḷəγ* 'secret', *laləm-/jaləm-/totəm-* 'steal'; Nenets *tāľe-* 'steal'; Enets *tali-/tare-* 'steal'; Nganasan *tolar-* 'steal'; Selkup *teli-/telti-/tuel-* 'steal'; Kamas *tholi* 'thief', *tholer-* 'steal'; Mator *teler-* 'steal'. It has not been identified in Tibeto-Burman languages (Refutation: Tibetan *gun\gud* 'loss, damage' sould be rejected due to phonetic conflict).

〖渾 (*hǔn/hȏn/vala-/vala-*)〗 has also been identified in some other Uralic languages (⇐ Sino-Finnic): Lappic *vālle-/vălla-* 'pour'; Mordvin *valo-* 'pour'. It has not been identified in Tibeto-Burman languages. Its ultimate origin is onomatopoeic, cf. Shenyang Yan [xŭ̆ăla·ɬ][A1] 'onomatopoeia for flowing water'.

Considering the etymological equivalents in other Uralic languages, this rhyme correspondence can be extended. E.g., the same rhyme generally correlates with the *-uolle* rhyme in Northern Sami (CL) (attested in 3 etyma), the *-al(o)* rhyme in Erzya Mordvin (6 etyma), the *-ol(ϑ̄)* rhyme in Mari (3 etyma), the *-ōl* rhyme in Tavda Mansi (3 etyma), the *-ul* rhyme in Vach Khanty (2 etyma), the *-al* rhyme in Hungarian (3 etyma), the *-āľe* rhyme in Obdorsk Nenets (3 etyma), the *-are* rhyme in Baicha Enets (2 etyma), the *-e̦l* rhyme in Tas Selkup (2 etyma), the *-ele* rhyme in Mator (2 etyma).

The morphophonological V_1[6] of these etyma varies logically. The prototypical form should be [ʷe]. Cf. [y] (Beijing Yan, Mari) ⇐; [u] (Beijing Yan, Taipei Min, Nordvagilsk Mansi) ⇐ [ʷ] (Guangzhou Yue) ⇐ [ʷe] (attested

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[6] V_1 = the vowel of the first syllable in a disyllabic morpheme $[C_1\underline{V}_1C_2V_2]$; vocalic medial or the first vowel in a diphthong nucleus in a monosyllabic morpheme $[C_1\underline{V}_1V_2C_2]$; 開合 'open/shut' (open — 0; shut — ʷ) and 等 'division' (1st — ɰ; 2nd — ɤ; 3rd — e̦; 4th — i̧) in Sino-linguistics.

as /$^w_3$/ ”3rd division shut” in 1161-YJ [assisted by 1008-GY]) ⇒ [ẹ] (Mator); ⇒ [ɣ] (Selkup); ⇒ [uǫ] (Lappic); ⇒ [ǫ] (Nganasan, Kamas) ⇒ [ɑ] (Finnic, Mordvin, Nenets, Enets).

The morphophonological V_2[7] of these etyma is identically /ə/ in Northern Sami (in 3 out of 4 etyma) [i\ẹ], Mari [ə], Nenets [ẹ], Enets [ẹ], Mator [ẹ], Beijing Yan [ə], and Taipei Min [0], but identically /a/ in Finnic [ɑ], Northern Sami (in 1 out of 4 etyma) [ɑ], and Guangzhou Yue [ɐ]. I am inclined to to believe that /ə/ is prototypical.

The morphophonological C_2[8] of these etyma is fundamentally unchanged on the Finnic (Uralic) side, but merged with /n/ on the Sinitic side. The onomatopoeic words in Chinese dialects support that [l] should be more original than [n]. Cf. [n] (Sinitic) ⇐ [l] (Finnic, Lappic, Mordvin, Mari, Permic, Khanty, Mansi, Hungarian, Nenets, Nganasan, Enets, Selkup, onomatopoeic words in Sinitic).

On the Sinitic side, the phones [n] and [l] are interchangeable in many Chinese dialects along the Yangtze River (cf. Cáo 2008 : 057). E.g. the place name *Nanjing* is pronounced [laˑŋↄ.t͡ɕiˑnↄ][(A2.A1)] by the native people in Nanjing. On the Finnic side, the phones [n] and [l] are also correspondent. E.g. the etymon meaning ’name’ is realised as *nimi*, *-e* in Finnish and Estonian, but *ľem/ľäm/ľem* in Mordvin, and *ləm/lüm* in Mari. Between [n] and [l], while a voiced dental spirant [ð] is attested in Chantaika Enets, cf.【蘊 (*yùn/uấn/ala/ala*)】*iδo*,【鯤 (*kūn/côn/kala/kala*)】*kaδe*.

3.3. Sino-Finnic rhyme correspondence: Finnish -*aja* ⇔ Mandarin -(ŭ)ɑˑŋ ⇔ Cantonese -(^{w})ǫˑŋ ⇔ Taiwanese -ǫˑŋ

The -*aja* rhyme in Finnish (the same in Estonian, -*ajā* in Livonian) corre-lates with the [-(ŭ)aˑŋ] rhyme in Beijing Yan, the [-(^{w})ǫˑŋ] rhyme in Guangzhou Yue, and the [-ǫˑŋ] rhyme in Taipei Min. See Table 4.

Table 4

Sino-Finnic rhyme correspondence: -*aja* ⇔ -(ŭ)ɑˑŋ ⇔ -(^{w})ǫˑŋ ⇔ -ǫˑŋ

DOM	Estonian	Finnish	Livonian	Beijing Yan	Guangzhou Yue	Taipei Min
【往】	*aja-* 'drive'	*aja-* 'drive'	*ajā-* 'drive'	[ʔŭɑˑŋↄ][(B)] 'proceed'	[wǫˑŋↄ][(B2)] 'proceed'	[ʔǫˑŋↄ][(B)①] 'proceed'
【碰】	*kaja-* 'echo'	*kaja-* 'echo'	–	[kŭɑˑŋↄ][(A1)] 'percussive sound'	[k^{w}ǫˑŋↄ][(A1)] 'percussive sound'	[kǫˑŋↄ][(A1)②] 'percussive sound'
【房】	*maja* 'house'	*maja* 'hut'	*mōi* 'shelter'	[fɑˑŋↄ][(A2)] 'house; room'	[fǫˑŋↄ][(A2)] 'room'	[pǫˑŋↄ][(A2)③] 'room'
【荒】	*vaja* 'shortage'	*vajaa* 'incomplete'	*vajāg* 'necessary'	[xŭɑˑŋↄ][(A1)] 'desolate'	[fǫˑŋↄ][(A1)] 'desolate'	[hǫˑŋↄ][(A1)④] 'desolate'
①(CL) [ʔiŏŋↄ][(B)]. ②(CL) [kʰn̩ˑↄ][(A1)]. ③(CL) [paˑŋↄ][(A2)]. ④(CL) [hn̩ˑↄ][(A1)].						

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[7] V_2 = the vowel of the second syllable in a disyllabic morpheme [$C_1V_1C_2\underline{V_2}$]; basic nucleus in a monosyllabic morpheme [$C_1V_1\underline{V_2}C_2$]; 內外轉 ’in/out turn’ (in — ə; out — a) in Sino-linguistics.

[8] C_2 = the intervocalic consonant in a disyllabic morpheme [$C_1V_1\underline{C_2}V_2$]; coda in a monosyllabic morpheme [$C_1V_1V_2\underline{C_2}$]; 韻尾 ’rhyme tail’ in Sino-linguistics.

About their etymological equivalents outside Sinitic and Finnic:

【往 (*wǎng*/*vǎng*/*aja-*/*aja-*)】 has also been identified in many other Uralic languages (⟸ Sino-Finnic): Lappic *vuodjit*/*vuoggje-*/*vuodjē-*/*vī̠jje-*/*vujje-*/*vuajje-* 'drive'; Udmurt *uj-*/*ul'-*/*ùj-*/*ujî̠-* 'drive, chase'; Komi *voj-* 'flee', *vojli̠-* 'run', *vojledli̠-* 'drive, hunt'; Mansi *wujt-*/*wojt-*/*vujt-* 'chase, hunt'. It has not been identified in Tibeto-Burman languages.

【硄 (*guāng*/*quang*/*kaja-*/*kaja-*)】 has also been identified in some other Uralic languages (⟸ Sino-Finnic): Northern Sami *gájanas*/*kāggjâ-**skāggjâ-* 'echo'; Lule Sami *kājatit*, *kajātit* 'to shout'. It has not been identified in Tibeto-Burman languages. Its ultimate origin is onomatopoeic.

【房 (*fáng*/*phòng*/*maja*/*maja*)】 has not been identified in other Uralic languages. It has also been identified in Latvian (⟸ Sino-Finnic, or ⟸ Finnic): *majā* 'house'. It has also been identified in Tibeto-Burman languages (⟸ Sino-Finnic, or ⟸ Sinitic): Tibetan *baŋ* 'store-room, store-house'; Kachin *dəbaŋ[I]* 'camp'; Lushai *baŋ* 'wall'.

【荒 (*huāng*/*hoang*/*vaja*/*vajaa*)】 has also been identified in another Uralic language (⟸ Sino-Finnic): Northern Sami *vaggjeg* 'shortage' and in Latvian (⟸ Sino-Finnic, or ⟸ Finnic): *vajāt* 'pursue'. It has not been identified in Tibeto-Burman languages.

Considering the etymological equivalents in other Uralic languages, this rhyme correspondence can be extended. E.g., the same rhyme generally correlates with the *-aggje* rhyme in Northern Sami. The Northern Sami output is more similar to Sinitic (-aŋ ⟸ *-aŋga ⟸ *-aŋgʲa ⟹ -aggja ⟹ -aja).

The morphophonological V_1 of these etyma varies logically. The prototypical form should be [ʷɯ]. Cf. [u] (Beijing Yan, Udmurt) ⟸ [ʷ] (Guangzhou Yue) ⟸ [ʷɯ] (attested as /ʷ₁/ "1st division shut" in 1161-YJ [assisted by 1008-GY], in 3 out of 4 etyma) ⟹ [uɔ]/[uɑ] (Lappic) ⟹ [ɑ] (Finnic, Lappic).

The morphophonological V_2 of these etyma is identically [ɑ] in Finnic and Beijing Yan, but [ɔ] in Guangzhou Yue and Taipei Min. I am inclined to believe that /a/ is prototypical.

The morphophonological C_2 of these etyma is fundamentally unchanged on the Sinitic side, but changed to /j/ on the Finnic (Uralic) side. The onomatopoeic words in Chinese dialects support that [ŋ] should be more original than [j] (the second etymon in Table 4 means 'sound of stone' in Sinitic). Cf. [j] (Finnic, Udmurt, Komi, Mansi) ⟸ [gʲ] (Lappic) ⟸ [ŋ] (Sinitic).

On the Sinitic side, the phonemes /j/ and /ŋ/ have already been correlated. E.g. 【牙 (*yá*/*nha*)】 'tooth' is [ʔɪ̯aː˦]$^{(A2)}$ in Beijing Yan ([ʔɪ̯-] is realised as [j] by many speakers), but [ŋaː˦]$^{(A2)}$ in Guangzhou Yue; 【齩 (*yǎo*/*ngǎo*)】 'chew' is [ʔɪ̯aʊ̯˅˩]$^{(B)}$ in Beijing Yan, but [ŋa̠ˑw˩]$^{(B2)}$ in Guangzhou Yue. Theoretically, the sound change should run as /j/ ⟸ /ɲj/ ⟸ /ɲgʲ/ ⟹ /ŋg/ ⟹ /ŋ/. The prenasalized palatalised velar obstruent /ɲgʲ/ should be median. A palatalised velar obstruent is attested in Lappic, cf. 【往 (*wǎng*/*vǎng*/*aja-*/*aja-*)】 *vuoggje-*; 【硄 (*guāng*/*quang*/*kaja-*/*kaja-*)】 *kāggjâ-*; 【荒 (*huāng*/*hoang*/*vaja*/*vajaa*)】 *vaggjeg*.

4. Overview

4.1. Some notes on toneme correspondences

Tonemes are secondary in both Sinitic and Finnic languages.

Based on etymological equivalents between Vietnamese and its neighbouring languages, Haudricourt (1954; 1961) established that Vietnamese tonemes originate in earlier consonantal contrasts, and suggested similar mechanisms for Chinese. He established the correspondences -x ⇒ -ʔ ⇒ the [B] toneme, and -s ⇒ -h ⇒ the [C] toneme. This theory has been accepted by many scholars. Based on early transliterations from neighbouring languages to Chinese, Pulleyblank (1962) supplied the same rule for the [C] toneme, while Mei (1970) supplied the same rule for the [B] toneme.

In summary, the fundamental tonemes are traces of affixes:
(1) *-0 ⇒ [A]: The [A] toneme is a trace of the morphophonological affix null.
(2) *-X ⇒ [B]: The [B] toneme is a trace of the morphophonological affix X.
(3) *-S ⇒ [C]: The [C] toneme is a trace of the morphophonological affix S.

Some actual etyma of the same root contain different fundamental tonemes, since different morphophonological affixes have been formerly added to the same root.

The [D] toneme is not fundamental. It is commonly applied to a syllable that ends in a plosive. It substitutes for the fundamental tonemes.

The binary further tonemes [..1] and [..2] arose when consonant voicing was lost in the morphophonological C_1 position. Etyma with a prototypical voiceless C_1 contain [..1] tonemes. Etyma with a prototypical voiced C_1 contain [..2] tonemes. The third further tonemes [..3] are related to length.

Tonemes are often identical in Sino-Finnic shared etyma. It implies that not only the roots but also the morphophonological affixes are identical(Gao 2008 : 52, 128).

Three Sino-Finnic toneme correspondences are demonstrated in Tables 5, 6, and 7. Each toneme correspondence is exemplified by five etyma. I do not extend them to other relevant languages, because it is not the focus of the present study. In these tables, the Finnic tonemes are designated according to the following rules (see p. 104):

Table 5

Sino-Finnic toneme correspondence: Finnic [A] ⟸ *-0 ⇒ Sinitic [A]

DOM	Estonian	Finnish	Livonian	Beijing Yan	Guangzhou Yue	Taipei Min
【鯤】	*kala*[A] 'fish'	*kala*[A] 'fish'	*kalā*[A] 'fish'	[kʰŭə·n˥]ʰ[A1] 'big fish' (obsolete)	[kʰwɐn·˥]ʰ[A1] 'big fish' (obsolete)	[kʰu·n˥]ʰ[A1] 'big fish' (obsolete)
【分】	*pala*[A] 'piece'	*pala*[A] 'piece'	*palā*[A] piece	[fə·n˥]ʰ[A1] 'divide; piece'	[fɐn·˥]ʰ[A1] 'divide; piece'	[hu·n˥]ʰ[A1]① 'piece'
【焚】	*põle-*[A] 'burn'	*pala-*[A] 'burn'	*palā-*[A] 'burn'	[fə·n˩]ʰ[A2] 'burn (entirely)'	[fɐn·˩]ʰ[A2] 'burn (entirely)'	[hu·n˩]ʰ[A2] 'burn (entirely)'
【渾】	*vala-*[A] 'pour'	*vala-*[A] 'pour'	*valā-*[A] 'pour'	[xuə·n˩]ʰ[A2] 'mix (liquid)'	[wɐn·˩]ʰ[A2] 'mix (liquid)'	[hu·n˩]ʰ[A2] 'mix (liquid)'
【房】	*maja*[A] 'house'	*maja*[A] 'hut'	*mō̱i*[A] 'shelter'	[fɑ·ŋ˩]ʰ[A2] 'house; room'	[fɔ·ŋ˩]ʰ[A2] 'room'	[pɔ·ŋ˩]ʰ[A2]② 'room'
①(CL) [pu·n˥]ʰ[A1] 'divide'. ②(CL) [pa·ŋ˩]ʰ[A2].						

(1) a morpheme with a short V_1 and without any morphophonological affix is classified as the [A] toneme;

(2) a morpheme with the broken tone (in Livonian) or the morphophonological affix X (realised as [x], [h], [ɦ] or [ks] in Finnish) is classified as the [B] toneme;

(3) a morpheme with a long V_1 or with the morphophonological affix S (realised as [s] or [ː] in Finnish) is classified as the [C] toneme.

Table 6

Sino-Finnic toneme correspondence: Finnic [B] ⇐ *-X ⇒ Sinitic [B]

DOM	Estonian	Finnish	Livonian	Beijing Yan	Guangzhou Yue	Taipei Min
【晚】	vana[A] 'old'	vanha[B] 'old'	vanā[A] 'old'	[ʔŭa·n˅][B] 'late; eve'	[ma·n˧][B2] 'late; eve'	[buăn˥]([B])① 'late; eve'
【緊】	kõhnA[B] 'thin'	kehno[B] 'wretched; bad'	–	[t͡ɕĭə·n˅][B] 'tight, fast'	[kɐn˧][B1] 'tight, fast'	[ki·n˥][B] 'tight, fast'
【北】	põhiA[B] 'base; north'	pohja[B] 'base'	pū'oj[B] 'base; north'	[peɪ˅][B] 'north'	[pɐk̚˥][D1] 'north'	[pǫk̚˥]([D1])② 'north'
【指】	käsi, -e[A] 'hand, arm'	käsi, -e[A] 'hand, arm'	ke'ž[B] 'hand, arm'	[t͡ʂɨ·˅][B] 'finger'	[t͡si:˧][B1] 'finger'	[t͡si·˥][B]③ 'finger'
【水】	vesi, -e[A] 'water'	vesi, -e[A] 'water'	ve'ž[B] 'water'	[sŭeɪ˅][B] 'water'	[søj·˧][B1] 'water'	[suăl̩˥][B]④ 'river'
①(CL) [mn̩˥][B]. ②(CL) [pak̚˥][D1]. ③(CL) [ki:˥][B] 'to finger'. ④(CL) [t͡suăl̩˥][B] 'water'.						

Table 7

Sino-Finnic toneme correspondence: Finnic [C] ⇐ *-S ⇒ Sinitic [C]

DOM	Estonian	Finnish	Livonian	Beijing Yan	Guangzhou Yue	Taipei Min
【岸】	kaldaS[C] 'shore'	kaltaS[C] 'shore'	–	[ʔa·n˥][C] 'shore'	[ŋ̍o·n˩][C2] 'shore'	[ga·n˧][C2] 'shore'
【宙】	taevas[C] 'sky, heaven'	taivas[C] 'sky, heaven'	tōvaz[C] 'sky, heaven'	[t͡ʂou̯˥][C] 'upper space'	[t͡sɐw·˩][C2] 'upper space'	[tiău·˧][C2] 'upper space'
【夜】	öö[C] 'night'	yö[C] 'night'	īe[C] 'night'	[ʔĭɛ·˥][C] 'night'	[jɛ·˩][C2] 'night'	[ʔia̯˧][C2] 'night'
【恰】	kõlbaS-[C] 'suit, fit'	kelpaS-[C] 'suit, fit'	kõlbõ-[C] 'suit, fit'	[t͡ʂʰĭa:˥][C] 'appropriate'	[hɐp̚˥][D1] 'appropriate'	[kʰap̚˥][D1] 'appropriate'
【怕】	pelgaS-[C] 'fear'	pelkäS-[C] 'fear'	–	[pʰa:˥][C] 'fear'	[pʰa:˧][C1] 'fear'	[pʰa:˥][C1] 'fear'

CAVEATS: Since the fundamental tonemes are secondary and originate in morphophonological affixes, it is difficult to say whether the identical tonemes on both sides have identically survived from the antiquity, or whether they have been coincidentally added to both Sinitic and Finnic. The chance to get an identical fundamental toneme in a pair of words is 1/3. It can be coincidental. However, the toneme correspondences can affirm that the morphophonological affixes are identical in Sinitic and Finnic.

4.2. Some notes on onset correspondences

The shared etyma demonstrated in the rhyme correspondences enable two onset correspondences to be established as well (Tables 8, 9). Here I will not supply these correspondences with more etyma, or extend them to other relevant languages, because it is not the keynote of the present study.

Table 8

Sino-Finnic onset correspondence: p- ⇔ f- ⇔ f- ⇔ h- (p-)

DOM	Estonian	Finnish	Livonian	Beijing Yan	Guangzhou Yue	Taipei Min
【分】	*pala* 'piece'	*pala* 'piece'	*palā* 'piece'	[fə·n˥]$^{(A1)}$ 'divide; piece'	[fɐn·˥]$^{(A1)}$ 'divide; piece'	[hu·n˥]$^{(A1)①}$ 'piece'
【焚】	*palav*② 'hot'	*pala-* 'burn'	*palā-* 'burn'	[fə·n˦]$^{(A2)}$ 'burn (entirely)'	[fɐn·˩]$^{(A2)}$ 'burn (entirely)'	[hu·nʎ]$^{(A2)}$ 'burn (entirely)'
【服】	*puge-* 'squeeze'	*puke-* 'dress'	*pugū-* 'creep'	[fu·˦]$^{(A2)}$ 'dress'	[fu·k˩]$^{(D2)}$ 'dress'	[hǫk˥·˥]$^{(D2)}$ 'dress'

① (CL) [pu·n˥]$^{(A1)}$ 'divide'. ② *põle-* 'burn'.

Table 9

Sino-Finnic onset correspondence: v- ⇔ xŭ- ⇔ w-/f- ⇔ h-

DOM	Estonian	Finnish	Livonian	Beijing Yan	Guangzhou Yue	Taipei Min
【渾】	*vala-* 'pour'	*vala-* 'pour'	*valā-* 'pour'	[xŭə·n˦]$^{(A2)}$ 'mix (liquid)'	[wɐn·˩]$^{(A2)}$ 'mix (liquid)'	[hu·nʎ]$^{(A2)}$ 'mix (liquid)'
【荒】	*vaja* 'shortage'	*vajaa* 'incomplete'	*vajāg* 'necessary'	[xŭɑ·ŋ˥]$^{(A1)}$ 'desolate'	[fɔ·ŋ˥]$^{(A1)}$ 'desolate'	[hǫ·ŋ˥]$^{(A1)①}$ 'desolate'
【惑】	*või* 'or'	*vai* 'or'	*või* 'or'	[xŭǫ·˩]$^{(C)②}$ 'or; confused'	[wa·k˩]$^{(D2)}$ 'or; confused'	[hiɐ̆k˥·˥]$^{(D2)}$ 'or; confused'

① (CL) [hŋ̍·˥]$^{(A1)}$. ② shifted from [xŭɤ·˩]$^{(C)}$.

An onset correspondence is similar to a simple sound correspondence, but it includes both initial and medial speech sounds. An onset correspondence is less evidential than a rhyme correspondence, because an onset is simpler than a rhyme. Moreover, Sinitic has more onsets than Finnic, so that different Sinitic onsets are mapped to the same merged onset in Finnic.

Returning to the keynote of the present study, Finnic has more rhymes than Sinitic, thus the rhyme mapping from Finnic to Sinitic is more definite and the rhyme correlation is more evidential. The Sino-Finnic (including Uralic) affinity is additionally supported by the rhyme correspondences between Sinitic and Uralic languages.

4.3. Notes on methods

Finally, returning to methods, I would like to remind the reader that it was not comparative linguists but classical etymologists who personally compared languages and proposed etymological equivalents. Although the

etymologists made numerous mistakes, their contribution should never be forgotten.

The major language families now claimed by comparative linguists were originally not based on proto-languages. E.g., in the establishment of the Finno-Ugric affinity, Finnish, Estonian, Lappish and Hungarian were directly compared (see Gyarmathi 1799), instead of comparing Proto-Finnic and Proto-Ugric.

Many Finnic roots have not been listed as Proto-Uralic merely because their etymological equivalents do not exist (have got lost or have never been identified) in other Uralic languages. It does not mean that these Finnic roots are not old enough to be compared with other languages. When an etymon is preserved in both Finnic and Ugric languages, it need not have survived in all of the other related languages placed between them. Similarly, if an etymon has survived in both Finnic and Sinitic languages, it need not have survived in all the other related languages placed between them. For this reason, even though the Uralic (or Finno-Ugric) language tree is accepted, the corpus of Proto-Uralic (or Proto-Finno-Ugric) cannot be used in further etymological studies.

The classical etymological method, which compares attested lects, is more efficient and evidential. Certainly, it is not reliable to compare only two lects. It is reliable if at least four representative lects (two from each side) are compared. If all known related lects (like the ten etyma in the rhyme correspondences demonstrated) are compared, it is very reliable. The procedure has actually reviewed and re-analysed all the data that were used to reconstruct the proto-language on the Finnic (Uralic) side. I am not wasting my time. I do not rely on reconstruted languages.

If regular sound correspondences among the correlated lects are, in addition, established on the basis of a sufficient number of etyma, the etymologies are extremely reliable. The regular sound correspondences rule out chance resemblances.

5. Conclusion

The present study explores rhyme correspondences between Sinitic and Finnic (~ Uralic) lects, taking Finnish *-ala* and *-aja* rhymes as an example. Two rhyme correspondences are established: (1) Finnish *-ala* ⇔ Beijing Yan [-(ŭ)ə·n] ⇔ Guangzhou Yue [-(ʷ)ɐn·] ⇔ Taipei Min [-uˑn]; (2) Finnish *-aja* ⇔ Beijing Yan [-(ŭ)ɑ·ŋ] ⇔ Guangzhou Yue [-(ʷ)ǫ·ŋ] ⇔ Taipei Min [-ǫˑŋ]. The rhyme correspondences are exemplified by ten Sino-Finnic (including Uralic) shared etyma.

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Abbreviations

121-SW — S. X ǔ (許慎), 說文解字 [Shuō wén jiě zì], 雒阳 (Luoyang) 121; **543-YP** —
Y. G ù (顧野王), 玉篇 [Yù piān], 建康 (Nanjing) 543, **1008-GY** — P. C h é n (陳彭年)
et al., 大宋重修廣韻 [Dà sòng chóng xiū guǎng yùn], 東京 (Kaifeng) 1008; **1161-YJ** —
L. Z h ā n g (張麟之), 韻鏡 [Yùn jìng] 1161; **2003-HKY** — 粵語審音配詞字庫 [Yuè-yǔ
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ЦЗИН-И ГАО (Тарту—Таллин)

СООТВЕТСТВИЯ РИФМ В КИТАЙСКИХ И УРАЛЬСКИХ ЯЗЫКАХ НА ПРИМЕРЕ ФИНСКИХ *-ala* И *-aja*

Автор изучает соответствия рифм в прибалтийско-финских (~ уральских) и китайских языках на примере финских *-ala* и *-aja*. Выявлены два соответствия: (1) финский *-ala* ⇔ севернокитайский [-(ǔ)ə·n] ⇔ кантонский [-(ʷ)ɐn·] ⇔ тайваньский [-u·n]; (2) финский *-aja* ⇔ севернокитайский [-(ǔ)ɑ·ŋ] ⇔ кантонский [-(ʷ)ǫ·ŋ] ⇔ тайваньский [-ǫ·ŋ]. Соответствия имеют 10 сино-финских (включая уральские) общих этимологических единиц.