



On etymology of Sinitic, Indo-European and Uralic terms for 'star' supported by regular sound correspondences

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Abstract

Using etymological methods, the present study has researched four Sinitic and Germanic shared (Sino-Germanic) etymologies (etyma) and two Sinitic and Uralic shared (Sino-Uralic) etyma. Two of the Sino-Germanic etyma form a rhyme correspondence. Three of the Sino-Germanic etyma form an onset correspondence. Two of the Sino-Uralic etyma form another rhyme correspondence. These regular sound changes validate the etymological connections in question. The Sino-Germanic term for 'star' and Sino-Uralic term for 'star' are supported.

Keywords: etymology, rhyme correspondence, onset correspondence, Sinitic, Uralic, Sino-Uralic, Germanic, Indo-European, Sino-Germanic, astronomical terms, star

Introduction

The Indo-European term for 'star' (Proto-Indo-European **h₂stér-ōn* 'star' (Kroonen, 2013, p. 478); equivalents e.g. Danish *stjerne* 'star'; Swedish *stjärna* 'star'; Old Norse *stjarna* 'star'; English *star*; Old English *steorra* 'star'; German *Stern* 'star'; Old High German *sterno/sterro/stern* 'star'; Gothic *stairnō* 'star'; Middle Irish *ser* 'star'; Latin *stēlla* 'star'; Avestan\Zend *star/stara* 'star'; Sanskrit स्त्रि (stṛ̥) 'star'; Tocharian-A *śren̥* 'stars') has been compared to the Sinitic term for 'star' 【星】 [OC-W *sien]; equivalents e.g. Mandarin *xīng* (xīng) 'star'; Cantonese *sing1/seng1* 'star'; Minnan *sing/tshinn/tshenn* 'star';] and suggested as a Sino-Germanic etymology (Gāo, 2008, p. 200).

The Uralic term for 'star' ("Proto-Finno-Wolgaic" **täštä* 'star > sign' (Rédei, 1988, p. 793); equivalents e.g. Estonian *täht/tähe* 'star, sign', *tähtis* 'significant, important'; Finnish *tähti/tähte-* 'star, sign'; Mordvin *tešte/tešče/itäštä* 'star, sign') has been compared to the Sinitic term for 'extreme' 【太】 [OC-W *t^hat]; equivalents e.g. Mandarin *tài* 'extremely'; Cantonese *taai3* 'extremely'; Minnan *thài* 'extremely'] and suggested as a Sino-Uralic etymology (Gāo, 2008, p. 142).

The present study researches and supports these two etyma with regular sound correspondences.

Materials and methods

The present paper is a comparative etymology study. The Sinitic language family is compared to the Germanic or the Uralic language family.

The Sinitic etyma are led by Chinese etyma (DOMs) that are historically attested Chinese glyphs (Sinograms). Their historical glosses are cited from the Chinese classical dictionaries (121-SW; 543-YP; 1008-GY). Their historical phonological values are cited from the work *Yùn jìng* (1161-YJ) with reference to the dictionary *Guāng yùn* (1008-GY) and transcribed according to Appendix 1. Their attested equivalents including forms and glosses are represented by Beijing Yan (Mandarin) (written in Hanyu Pinyin including non-simplified forms), Guangzhou Yue (Cantonese) (written in Jyutping), Taipei Min (Minnan) (written in Tâi-lô), Sino-Japanese¹ Go-on and Kan-on (written in orthography and Hepburn), Sino-Korean (written in orthography and the Revised Romanization) and Sino-Vietnamese (written in orthography), in this fixed order. Their historically attested Old Chinese (OC) rhymes are given according to (Wáng, 1980) and reconstructively transcribed according to Appendix 2.

The Germanic etyma are based on the relevant etymological dictionaries (Nielsen, 1966; Kluge, Seebold, 2011) and (Kroonen, 2013). Their attested equivalents including contemporary forms and glosses are represented by Danish, Swedish, Norwegian (Bokmål), Icelandic, Old Norse, English, Old English, Dutch, Old Low German, German, Old High German, and Gothic, in this fixed order.

The Uralic etyma are based on the relevant etymological dictionaries (Rédei, 1988) and (Itkonen, Kulonen, 2001). Their attested equivalents including contemporary forms and glosses are represented by Estonian, Finnish, Sami\Lappish North/Lule/Inari/Skolt/Kildin (equivalents up to (Lehtiranta, 1989); North Sami forms are adjusted according to (Sammallahti, 1989), Mordvin, Mari\Cheremis, Udmurt\ Votyak, Komi\Zyrian, Khanty\Ostyak, Mansi\Vogul, Hungarian, Nenets\Yurak, Enets\Yen, Nganasan\Tawgi, Selkup and Kamass, in this fixed order.

For the etyma in question, etymological equivalents in other languages (other Indo-European, Tibeto-Burman etc.²) claimed by other scholars are checked in relevant etymological or comparative works, e.g. (Pokorny, 1959; Rédei, 1988; Peiros, Starostin, 1996; Itkonen, Kulonen, 2001; Schuessler, 2007; Metsmägi, Sedrik, Soosaar, 2012). Such extended equivalents are mostly cited as in references.

Non-English glosses are translated to English in the present study. Some modifications within Germanic or Uralic etyma (adding or deleting equivalents) are made and remarked in the present study. Refutations of previously claimed etymological equivalents are given in footnotes.

Language reconstructions are listed only for reference reasons. All the attested language data are compared instead of trusting the phonetic and semantic details of reconstructions, because the reconstructions are subject to changes depending on (newly compared) attested linguistic data. Two Old Chinese (OC) reconstructions, OC-W according to (Wáng, 1980) and OC-Z

¹ Sino-Japanese is a linguistic term for the portion of the Japanese vocabulary that is of Chinese origin or makes use of morphemes of Chinese origin (similar to the use of Latin or Greek in English). The same applies to the terms Sino-Korean and Sino-Vietnamese. They do not mean

² Other language comparisons involving Sinitic are mainly: (1) Sino-Yeniseian (Ligeti, 1950; Gao 2017), Sino-Tibetan-Yeniseian (Lewy, 1933; Bouda, 1957; Sedláček, 2008) or Sino-Caucasian including Tibeto-Burman (Starostin, 1982, pp. 44–237; Starostin 1984, pp. 19–38; Starostin, 1991, pp. 12–41; Starostin, Ruhlen, 1994, pp. 70–92); (2) Sino-Tibetan-Athapaskan (Shafer, 1952, 1957, 1969); (3) Sino-Austroasiatic or Sino-Austronesian (Conrad, 1916, pp. 475–504; Conrad, 1923; Wulff, 1942; Sagart, 1990, 1993, 1994) and Sino-Tibetan-Austronesian (Sagart, 2005, pp. 161–176). In an etymological study, all language comparisons should be equally treated at the etyma level. Single etymological comparisons can be correct or incorrect, but the validity of the general directions cannot be fairly discussed until most etyma are clearly demonstrated. However, these other comparisons do not touch the etyma in question in the present study.

according to (Zhèng-zhāng, 2013), are listed. Other reconstructions are quoted from the direct references.

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 etyma representing a sufficient number of the languages in question. Many scholars are still comparing only Tibetan, Burmese or another Tibeto-Burman language to Sinitic e.g. (Shī, 2000; Zhang, Jacques, Lai, 2019). The works (Benedict, 1972) and (Matisoff, 2003) have compared more “Sino-Tibetan languages”, whereas many comparisons do not touch Sinitic. The work (Peiros, Starostin, 1996) compares only five “Sino-Tibetan languages”: Sinitic, Tibetan, Burmese, Jingpho\Kachin and Mizo\Lushai, whereas still many comparisons do not touch Sinitic. Etyma without Sinitic equivalents cannot be labeled as “Sino-Tibetan”. Etyma with equivalents only in one Tibeto-Burman language and Sinitic may be non-genetically diffused (loaned/borrowed) from Sinitic. There is a website called “The Sino-Tibetan Etymological Dictionary and Thesaurus” (<https://stedt.berkeley.edu>), whereas its content is so far rather a thesaurus (book of synonyms, collection of X-English dictionaries) than an etymological dictionary. This is the current situation of the comparative studies between Sinitic and Tibeto-Burman. Moreover, the Sino-Tibetan hypothesis has been successively criticized (Miller 1974; Beckwith, 2002, pp. 113–158; Beckwith, 2006, pp. 179–200; Beckwith, 2008, pp. 161–201; Hé, 2004; Guō, 2010, p. 21; Zhāng, 2012, 2013, 2014; Qú, Jin, 2013; Qú, 2019). Besides, there are hypotheses for the multiple origins of Sinitic (Lǐ, 1990; Schuessler, 2003). In sum, the notion Sino-Tibetan cannot be considered as a certain language family which represents Sinitic.

Etymological equivalents are given in orthographies or transcriptions. Equivalents in Western alphabets are given in boldface if they are found in official languages covered by ISO 639-1. Equivalents in Roman alphabets are given in italic. Cyrillic alphabets are transliterated into Roman alphabets according to ISO 9. If a given equivalent word is longer than one morpheme, the targeted morpheme is underlined (if certain). In successive data, dialectal and authorial variants are separated by a slash (/); grammatical variants are separated by a backslash (\); while lexical variants are separated by a comma (,).

Ancient and fully etymological Chinese etyma (DOMs) are put in the brackets 【】. Ordinary Chinese terms are put in the brackets 〔〕 or written without brackets. Double quotation marks (“”) are added when its target is quoted but not agreed. Double arrows (⇒ or ⇐) indicate genetic diffusions ('inherited' in Western linguistics; 'born' in Sino-linguistics). Single arrows (→ or ←) indicate non-genetic diffusions ('loaned/borrowed' in Western linguistics; 'educated' in Sino-linguistics).

The methods follow traditional etymology cf. (Vossius, 1622; Lemon, 1783; Rask, 1818; Gāo, 2008) and renewed etymology, cf. (Gao, 2012, 2014, 2017, 2018, 2019a, 2019b, 2020; Gao, Tender, 2020). This study includes also methods of Sino-phonology, cf. (1008-GY; 1161-YJ) which are ancient technologies.

Results and discussion

The common format of the next etymological paragraphs is:

#Number of etymon) 【DOM】 〔^{historical reference: phonetic description}_{original gloss 'gloss'} (transcribed from); Mandarin form 'gloss'; Cantonese form 'gloss'; Minnan form 'gloss'; Sino-Japanese form; Sino-Korean form; Sino-Vietnamese form; {OC rhyme group; OC-W reconstruction; OC-Z reconstruction}〕

(Read: The Sinitic etymon 【DOM】 with the contents 【...】) is or has been compared (reference) to the Germanic or Uralic etymon after the equivalents: ... (reference).

This etymon has been or not been identified in other languages (reference). This paragraph is used for other language groups compared in other directions (not Sinitic ~ Germanic or Uralic but Sinitic ~ other, Germanic ~ other, or Uralic ~ other) by other scholars.

#1) 【星】 【說文(121-SW): [星] 萬物之精上為列星('star'); 玉篇(543-YP): [星] 先丁切 萬物之精也列宿也('star'); 廣韻(1008-GY): 桑經切 星宿】 韻鏡(1161-YJ): 外轉第三十五開四等平聲齒音[左]清(outbound, final-35, labialized-, division-4, tone-A, dental initial [fricative+] voiced-'star'; θeap^A); Mandarin *xīng* (*xīy*) 'star'; Cantonese *sing1/seng1* 'star'; Minnan *sing/tshinn/tshenn* 'star'; Sino-Japanese Go-on しょう (*shō*); Kan-on せい (*sei*); Sino-Korean 성(*seong*); Sino-Vietnamese *tinh*; {OC rhyme 耕韻 *-ŋ(θ)a; OC-W *sieŋ; OC-Z “*sle:ŋ”}】 has been compared (Gāo, 2008, p. 200) to the Germanic etymon after the equivalents: Danish *stjerne* 'star'; Swedish *stjärna* 'star'; Norwegian *stjerne* 'star'; Icelandic *stjarna* 'star'; Old Norse *stjarna* 'star'; English *star*; Old English *steorra* 'star'; Dutch *ster* 'star'; Old Low German *sterro* 'star'; German *Stern* 'star'; Old High German *sterno/sterro/stern* 'star'; Gothic *stairnō* 'star'; {Proto-Germanic *ster(r)a/ōn- 'star' (Kroonen, 2013, p. 478)}. {Proto-Sino-Germanic *steŋa-R 'star'}

This etymon has been identified in other Indo-European languages: {Celtic: Middle Irish *ser* 'star'; Welsh *sêr* 'stars'; Cornish *ser* 'stars'; Breton *ser* 'stars'}; {Italic: Latin *stella* 'star'; Italian *stella* 'star'; French *étoile* 'star'; Spanish *estrella* 'star'; Portuguese *estrela* 'star'; Romanian *stea* 'star'}; Greek αστέρι (*astéri*) 'star'; Ancient Greek ἀστήρ (*astér*) 'star'; Hittite (*hašterz*) 'star'; [Old] Armenian սւնդ (*astl*) 'star'; {Indo-Iranian: Avestan\Zend *star/stara* 'star'; Kurdish *estére* 'star'; Ossetian ستانلى (*st'aly*) 'star'; [Classical] Persian ستاره (*setâre*) 'star'; Tajik қитора (*sitora*) 'star'; Pashto *stóray* 'star'; Sanskrit स्त्र (*str̥*) 'star', त्रि (*tr̥*) 'star (Vedic)', तरा (*tārā*) 'star'}; Tocharian-A *śre* 'star', *śren̥* 'stars'; Tocharian-B *ściryē* 'star'; {Proto-Indo-European *st̥er- 'star' (Pokorny, 1959, p. 1027); *h₂ster, *h₂stér-ōn (Kroonen, 2013, p. 478)}. {⇒ Proto-Sino-Germanic}

This etymon has not been identified in other languages.³

The following etyma #2-4 are studied in order to form a rhyme correspondence or an onset correspondence with the etymon #1.

#2) 【幸】 【說文(121-SW): [□] 吉而免凶也('luckily'); 玉篇(543-YP): [□] 戶耿切 遇也吉而免凶曰□('encounter, luckily'); 廣韻(1008-GY): 戸耿切 說文作□吉而免凶也('121-SW said: luckily'); 韵鏡(1161-YJ): 外轉第三十五開二等上聲喉音[左]濁(outbound, final-35, labialized-, division-2, tone-B, laryngeal initial [fricative+] voiced+)】 韵鏡(1161-YJ): 外轉第三十五開二等上聲喉音[左]濁(outbound, final-35, labialized-, division-2, tone-B, laryngeal initial [fricative+] voiced+) (hōap^B); Mandarin *xìng* (*xīy*) 'luckily'; Cantonese *hang6* 'luckily'; Minnan *hīng* 'luckily'; Sino-Japanese Go-on ぎょう (*gyō*); Kan-on こう (*kō*); Sino-Korean 행(*haeng*); Sino-Vietnamese *hạnh*; {OC rhyme 耕韻 *-ŋ(θ)a; OC-W *yeŋ; OC-Z “*gre:ŋ?”}】 is compared (first publication) to the Germanic etymon after the equivalents: Danish *gerne* 'willingly'; Swedish *gärna* 'willingly'; Norwegian *gjerne* 'willingly'; Icelandic *gjarn* 'willing', *gjarna* 'willingly'; Old Norse *gjarna* 'willing', *girna* 'desire'; English *yearn*; Old English *georn* 'eager', *giernian* 'yearn'; Dutch *gaarne* 'willingly'; Old Low German *gerno* 'willingly', *girnean* 'desire'; German *gern/gerne* 'willingly'; Old High German *gerno* 'willingly'; Gothic *gairnjan* 'desire'; {Proto-Germanic *gerna- 'desirous' (Kroonen, 2013, p. 175)}. {Proto-Sino-Germanic *góŋa-R 'yearn'}

³ REFUTATION: Previously claimed e.g. (Gamkrelidze, Ivanov, 1995, pp. 591–592) etymological equation from this Proto-Indo-European etymon to Proto-Semantic *‘ač-ṭr- ‘god(dess)’ is rejected due to phonetic and semantic inconsistencies. It was already rejected by Bomhard as some other prior studies (Bomhard, 2019, p. 2). Bomhard suggested that this Proto-Indo-European etymon is a derivative of the Proto-Indo-European root *ăs- 'to burn, to glow' (Pokorny, 1959, p. 68). This analysis is not relevant to the present study. We are observing rather a later diffusion from Germanic to Sinitic than a primitive diffusion from Proto-Indo-European to Sinitic.

This etymon has been identified in other Indo-European languages: Old Irish *gor* 'devout'; Latin **horior** 'encourage, urge'; [Ancient] Greek **χαίρω** (*khairō/chairo*) 'rejoice'; Hittite *kariia(t)ā(ri)* 'be gracious'; Avestan\Zend *zara-* 'strive, goal'; Sanskrit *háryati* 'like, delight in'; Tocharian-A *kar(y)* 'laugh'; Tocharian-B *ker(y)* 'laugh'; {Proto-Indo-European **ǵher-* 'yearn for' (Pokorny, 1959, p. 440); **ǵherh₁-no-* (Kroonen, 2013, p. 175)}. {⇒ Sino-Germanic}

This etymon has not been identified in other languages.

#3) 【腥】 說文(121-SW): 星見食豕令肉中生小息肉也('stinky pork'); 玉篇(543-YP): 桑丁切
韻鏡(1161-YJ): [=星]外轉第三十五開四等平聲齒音[左]清(outbound, final-35, labialized-, division-4, tone-A, dental initial [fricative+])
肉('stinky pork'); voiced-^A (θeŋ^A); Mandarin *xīng* (*xīng*) 'fish stink'; Cantonese *sing1/seng1* 'stink'; Minnan *sing/tshinn/tshenn* 'stink'; Sino-Japanese Go-on しょう (*shō*); Kan-on せい (*sei*); Sino-Korean 성 (*seong*); Sino-Vietnamese *tinh*; {OC rhyme 耕韻 *-n(θ)a; OC-W *sienj; OC-Z “*se:ŋ”}] has been compared (Gāo 2008, p. 200) to the Germanic etymon after the equivalents: Danish *stinke* 'stink'; Swedish *stinka* 'stink'; Norwegian *stinke* 'stink'; English *stink*; Old English *stincan* 'stink'; Dutch *stinken* 'stink'; Old Low German *stinkan* 'stink'; German *stinken* 'stink'; Old High German *stinkan* 'stink'; {Proto-Germanic **stinkwan-* “thrust, clash;” stink' (Kroonen, 2013, p. 480)}. {Proto-Sino-Germanic **stęŋka* 'stink'}

This etymon has not been identified in other Indo-European languages.⁴

This etymon has been identified in some Tibeto-Burman languages: Jingpho\Kachin *sij*³³ 'smell, scent, odor of fresh, raw food'; Chepang *sayy-* 'emit smell, odor, be rotten'; Lepcha *mūŋ-śij*, Rawang *puṣej* 'stench'; Lushai *teey^L/teen^L* <*treejh* 'ill-smelling' (Schuessler, 2007, p. 540). {← Sino-Germanic}

This etymon has not been identified in other languages.

#4) 【始】 說文(121-SW): 女之初也('start of woman'); 玉篇(543-YP): 式子切
韻鏡(1161-YJ): 詩止切 初也('start'); 說文云女之初也('121-SW said: start of woman');
韻鏡(1161-YJ): 内轉第八開三等上聲齒音[左]清(inbound, 8th final, labialized-, division-3, tone-B, dental initial [fricative+])
voiced-^B (θewi^B); Mandarin *shǐ* (*shǐ*) 'start'; Cantonese *ci2* 'start'; Minnan *sú/sí* 'start'; Sino-Japanese Go-on し (shi); Kan-on し (shi); Sino-Korean 시 (si); Sino-Vietnamese *thǐ*; {OC rhyme 之韻 *-?ə; OC-W *cɪə; OC-Z “*hlju?”}] has been compared (Gāo, 2008, p. 206) to the Germanic etymon after the equivalents: Danish *stjært* 'tail'; Swedish *stjärt* 'tail'; Norwegian *stjert* 'tail'; Icelandic *stertur* 'tail'; Old Norse *stertr* 'tail'; English *start*; Old English *steort* 'tail'; Dutch *staart* 'tail'; German *Sterz* 'tail, handle'; Old High German *sterz* 'tail'; {Proto-Germanic **sterta-* 'tail' (Kluge, Seibold, 2011, p. 883)}. {Proto-Sino-Germanic **sterta* 'tail, start'}

This etymon has not been identified in other languages.

#5) 【太】 玉篇(543-YP): 他大切 甚也('extremely'); 廣韻(1008-GY): 他蓋切
韻鏡(1161-YJ): 外轉第十 五開一等去聲舌音濁(outbound, final-15, labialized-, division-1, tone-C, alveolar initial voiced+) (dóaq^C); in compounds: 太陽
'extremely-solar (sun); 太陰 'extremely-lunar (moon); 太歲 'extremely-year (Jupiter); 太白 'extremely-white (Venus); Mandarin
tài 'extremely', *tài-iáy* (*tài-yáng*) 'extremely-solar (sun)', *tài-īn* (*tài-yīn*) 'extremely-lunar (moon)', *tài-suèi* (*tài-suí*) 'extremely-year (Jupiter)', *tài-bái* 'extremely-white (Venus); Cantonese *taai3* 'extremely', *taai3-joeng4* 'extremely-solar (sun)', *taai3-jam1* 'extremely-lunar (moon)', *taai3-seoi3* 'extremely-year (Jupiter)', *taai3-baak6* 'extremely-white (Venus); Minnan *thài* 'extremely', *thài-iōng* 'extremely-solar (sun)', *thài-im* 'extremely-lunar (moon)', *thài-suè* 'extremely-year (Jupiter)', *thài-pik* 'extremely-white (Venus); Sino-Japanese Go-on たい (tai); Kan-on たい (tai); Sino-Korean 태 (tae); Sino-Vietnamese *thái*; {OC rhyme 月韻 *-ta; OC-W *th^{at}; OC-Z “*tha:ds”}] has been compared (Gāo, 2008, p. 142) to the Uralic etymon after the equivalents: Estonian *täht\lähe* 'star, sign'; *tähtis* 'significant, important'; Finnish *tähti\lähte-* 'star, sign'; Finnic other

⁴ REFUTATION: Previously claimed (Kroonen, 2013, p. 480) etymological equation from these Germanic equivalents to Gothic *stigqan* 'hit'; Old Norse *stökva* 'leap, jump, flee'; etc. ; Old English *stincan* 'leap, spring'; Lithuanian *siéngti* 'exert oneself'; and Latin *re-stingere* 'push back, suppress' is rejected due to semantic inconsistencies. Old English *stincan* 'leap, spring' must be a homonym to Old English *stincan* 'smell, stink'.

tē'd/tähti/tiähti/tähtaz 'star'; Sami\Lappish *daste*/---/*täšt/täšt* 'star'; Mordvin *tešte/tešče/täštä* 'star, sign'; Mari\Cheremis *tištə/tište* 'house sign / name sign'; {"Proto-Finno-Wolgaic" **täštä* 'star > sign' (Rédei, 1988, p. 793). {Proto-Sino-Uralic **dóta-S* 'extreme'}

This etymon has not been identified in other languages.

#6 【列】 說文(121-SW): 分解也('divide'); 玉篇(543-YP): 力泄切 分解也('divide'); 廣韻(1008-GY): 良辭切 行次也位序也又陳也布也說文作 分解

韻鏡(1161-YJ): 外轉第二十一開四等入聲舌音齒清濁(outbound, final-21, labialized-, division-4, tone-也('row, order, list, spread, 121-SW said: divide'); D, dental alveolar initial voiced+) (leaf^D); Mandarin *liè* 'row, split' (裂); Cantonese *laat6/lit6* 'row, split' (裂); Minnan *liāt* (裂) 'row, split'; Sino-Japanese Go-on れち(rechi); Kan-on れつ(retsu); Sino-Korean 레(ryeol) /列(yeol); Sino-Vietnamese *liết*; {OC rhyme 月韻 *-ta; OC-W *liat; OC-Z “*red”} 】 has been compared (Gao, 2008, p. 179) to the Uralic etymon after the equivalents: Estonian *laht|lahe* 'bay', *lahti* 'open'; Finnish *lahti|lahte-* 'bay'; Finnic other *laksi|laht* 'bay'; Sami\Lappish *luokta|luokta/luohtha/lux̩t̄/lūx̩t̄* 'bay'; {"Proto-Finno-Lappic" **lakte* 'bay' (Korhonen, 1981, p. 90)}. {Proto-Sino-Uralic *leta-X 'divide'}

This etymon has not been identified in other languages.⁵

Overview

The etyma #1 【星】 and #2 【幸】 form a rhyme correspondence (Table 1).

Table 1. Rhyme correspondence (Rc#2020JGaoA3t1): Old Chinese rhyme 耕韻 *-ŋ(θ)a ⇔ Mandarin/Minnan -*ij* (-ing) ⇔ Danish -*erne* ⇔ Swedish -*ärna* ⇔ German -*ern* ⇔ Gothic -airn- ⇔ Avestan\Zend -*ara*

DOM	Mandarin	Cantonese	Minnan	Danish	Swedish	German	Gothic	Avestan
【星】	<i>xīng</i> ^(xīng) 'star'	<i>sing1</i>	<i>sing</i>	<i>stjerne</i>	<i>stjärna</i>	<i>Stern</i>	<i>stairnō</i>	<i>stara</i>
【幸】	<i>xìng</i> ^(xīng) 'luckily'	<i>hang6</i>	<i>hīng</i>	<i>gerne</i>	<i>gärna</i>	<i>gern</i>	<i>gairnjan</i>	<i>zara-</i>

The etyma #1 【星】 , #3 【腥】 and #4 【始】 form an onset correspondence (Table 2).

Table 2. Onset correspondence (Oc#2020JGaoA3t2): Mandarin *x-/ś-* ⇔ Cantonese/Minnan *s-* ⇔ Danish/Swedish *st(j)-* ⇔ English/German *st-*

DOM	Mandarin	Cantonese	Minnan	Danish	Swedish	English	Dutch	German
【星】	<i>xīng</i> ^(xīng) 'star'	<i>sing1</i>	<i>sing</i>	<i>stjerne</i>	<i>stjärna</i>	<i>star</i>	<i>ster</i>	<i>Stern</i>
【腥】	<i>xīng</i> ^(xīng) 'stinky'	<i>sing1</i>	<i>sing</i>	<i>stinke</i>	<i>stinka</i>	<i>stink</i>	<i>stinken</i>	<i>stinken</i>
【始】	<i>shǐ</i> ^(shǐ) 'start'	<i>ci2</i>	<i>sú/sí</i>	<i>stjært</i>	<i>stjärt</i>	<i>start</i>	<i>staart</i>	<i>Sterz</i>

The etyma #5 【太】 and #6 【列】 form a rhyme correspondence (Table 3).

Table 3. Rhyme correspondence (Rc#2020JGaoA3t3): Old Chinese rhyme 月韻 *-ta : Estonian -*aht|-ahe* : Finnish -*ahti|-ahte-*

DOM	Mandarin	Cantonese	Minnan	Estonian	Finnish	North Sami
【太】	<i>tài</i> 'extremely'	<i>taai3</i>	<i>thài</i>	<i>täht tähe</i>	<i>tähti tähte-</i>	--
【列】	<i>liè</i> 'row, split'	<i>laat6</i>	<i>liāt</i>	<i>laht lahe</i>	<i>lahti lahte-</i>	<i>luokta</i>

⁵ REFUTATION: Previously claimed (Itkonen, Kulonen, 2001, vol. 2, p. 36) etymological equation from Finnic to Baltic: Lithuanian *lañktis* 'swift, reel'; Latvian *līcis* 'bay' is rejected due to semantic and phonetic inconsistencies.

Conclusions

Using etymological methods, the present study has researched four Sinitic and Germanic shared (Sino-Germanic) etymologies (etyma) and two Sinitic and Uralic shared (Sino-Uralic) etyma. Two of the Sino-Germanic etyma form a rhyme correspondence. Three of the Sino-Germanic etyma form an onset correspondence. Two of the Sino-Uralic etyma form another rhyme correspondence. These regular sound changes validate the etymological connections in question. The Sino-Germanic term for 'star' and Sino-Uralic term for 'star' are supported.

Appendix 1: Transcription of 1161-JY 韻鏡 (Gāo, 2014, pp. 81–83) with revision

1) 聲組 (initials)	Appendix 1: Transcription of 1161-JY 韵鏡 (Gāo, 2014, pp. 81–83) with revision																																																																																																		
舌音齒 dental alveolar	喉音 laryngeal	齒音 dental	牙音 velar	舌音 alveolar	唇音 labial																																																																																														
清濁	清濁	清濁	左濁	左清	清	左濁	左清	濁	次清	清	清濁	濁	次清	清	清濁	濁	次清	清																																																																																	
b	l	s	f	h	?	d	θ	k	tš	g	n	g	kʰ	k	n	d	tʰ	p																																																																																	
2) 韵腹韻尾 (rimes) (with 《廣韻》韻部、《七音略》註釋、《四聲等子》韻攝)																																																																																																			
內轉(a) (incl.外轉第十七至二十[false 外(x)])	外轉(a) (excl.外轉第十七至二十[false 外(x)])																																																																																																		
東-屋第一開(əŋ)、 冬-鍾-沃燭第二開合(əŋ) (⇒通攝(əŋ))	江-蟹第三開合(əŋ) (⇒江攝(əŋ))																																																																																																		
支第四開合(*wŋ)、脂第六開(əŋ)、 支第五合(*ŋ)、脂第七合(*ŋ)、之第八開(*wŋ)、 微-廉第九開(əŋ)、 微-廉第十合(*ŋ) (⇒止攝(*ŋ))	佳第十五開(əŋ)、 佳第十六合(*ŋ)、 咍皆齊-夬第十三開(əŋ)、 咍皆齊-夬第十四合(*ŋ) (⇒蟹攝(*ŋ))																																																																																																		
魚十一開(ə)、虞模第十二開合(ə)、 歌第二十七合(ə)、戈第二十八合(*e) (⇒果攝(ə))	麻第二十九開(a)、 麻第三十合(*a) (⇒假攝(a))																																																																																																		
痕臻真-沒禮質第十七開(ən)、 魂眞-沒術第十八合(*ən)	寒刪仙先-曷黠薛屑第二十三開(an)、 桓刪仙先-禾黠薛屑第二十四開(*an)																																																																																																		
欣-迄第十九開(əŋ)、 文-物第二十合(*əŋ) (⇒臻攝(*əŋ))	山元仙-雞月薛第二十一開(əŋ)、 山元仙-雞月薛第二十二合(*əŋ) (⇒山攝(əŋ))																																																																																																		
侯尤幽第三十七開(əw) (⇒流攝(*əw))	蒙爻蕭肴第二十五開(aw)、 肴第二十六合(*aw) (⇒效攝(aw))																																																																																																		
唐陽-鐸藥第三十一開(əŋ)、 唐陽-鐸藥第三十二合(*əŋ) (⇒宕攝(əŋ))	庚皓-陌昔第三十三開(əŋ)、 庚皓-陌昔第三十四合(*əŋ)																																																																																																		
登蒸-德職第四十二開(əŋ)、 登蒸-德職第四十三合(*əŋ) (⇒曾攝(əŋ))	耕清肴-麥貴雞第三十五開(əŋ)、 耕青肴-麥雞第三十六合(*əŋ) (⇒梗攝(əŋ))																																																																																																		
侵-紐第三十八合(*əm) (⇒深攝(*əm))	覃咸鹽添-含洽葉帖第三十九開(am)、 談銜虞鹽-盈狎葉第四十合(*am)、 凡-乏第四十一合(*əm) (⇒咸攝(am))																																																																																																		
modification of D tone codas: -ŋ~ŋ-k ^b ; -ŋ~ŋ-s ^b ; -n~n-t ^b ; -ŋ~ŋ-č ^b ; -n~n-č ^b ; -m~m-p ^b .																																																																																																			
3) 聲調 (tones): 平 ^a , 上 ^b , 去 ^c , 入 ^d .	5) 韵腹 (nucleus) (據《七音略》)																																																																																																		
4) 韵頭 (medials)	<table border="1"> <tr> <th></th><th>一等</th><th>二等</th><th>三等</th><th>四等</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></tr> <tr> <td>開</td><td>ə w </td><td>ə y </td><td>ə ɛ </td><td>ə i </td><td>重內</td><td>w[u]</td><td>w[u]</td><td>i i;u u </td><td>i i;</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td>合</td><td>ʷə w </td><td>ʷə y </td><td>ʷə ɛ </td><td>ʷə i </td><td>輕內</td><td>ə v ;ə ɔ </td><td>ə v </td><td>e[e]</td><td>e[e];e ɔ </td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td>開合</td><td>ə y </td><td>ə ɔ </td><td>ə ɛ </td><td>ə i </td><td>假外</td><td>æ[x]</td><td>æ[x]</td><td>æ[e]</td><td>æ[e];æ ɔ </td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>		一等	二等	三等	四等																開	ə w	ə y	ə ɛ	ə i	重內	w[u]	w[u]	i i;u u	i i;											合	ʷə w	ʷə y	ʷə ɛ	ʷə i	輕內	ə v ;ə ɔ	ə v	e[e]	e[e];e ɔ											開合	ə y	ə ɔ	ə ɛ	ə i	假外	æ[x]	æ[x]	æ[e]	æ[e];æ ɔ																												
	一等	二等	三等	四等																																																																																															
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合	ʷə w	ʷə y	ʷə ɛ	ʷə i	輕內	ə v ;ə ɔ	ə v	e[e]	e[e];e ɔ																																																																																										
開合	ə y	ə ɔ	ə ɛ	ə i	假外	æ[x]	æ[x]	æ[e]	æ[e];æ ɔ																																																																																										

5) 其餘術語對應 (other technical terms)

Sino-linguistics		清	次清	濁	清濁	開	合	開合
Linguistics		voiced-	aspirated+	voiced+	voiced±	labialised-	labialised+	labialised±=rounded+=rounded+
Linguistics in Chinese		清	送氣	浊	无视清浊	非唇化	唇化	圓唇

Appendix 2: Reconstructive transcription of OC rhymes (Gāo, 2014, p. 79) with revision

微韻 *-la	歌韻 *-la	脂韻 *-ðə	支韻 *-ðə	之韻 *-ə	俟韻 *-o	魚韻 *-a	幽韻 *-wa	宵韻 *-wa	
物韻 *-ta	月韻 *-ta	質韻 *-ðɔ	錫韻 *-ðə	職韻 *-kɔ	屋韻 *-ko	鐸韻 *-ka	覺韻 *-ua	藥韻 *-ua	絪韻 *-pa
文韻 *-n(i)o	元韻 *-n(i)o	眞韻 *-ŋ(i)o	耕韵 *-ŋ(i)o	蒸韻 *-ŋ(i)o	東韻 *-ŋ(i)o	陽韻 *-ŋ(i)o			盍韻 *-pa

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- 543-YP – Gù, Y. |顧野王. *Yù piān* |玉篇 [Jade book]. Jiankang |建康 (Nanjing), Liang |梁 (China), 543.
- 1008-GY – Chén, P. děng |陳彭年等. *Dà sòng cóng xiū guǎng yùn* |大宋重修廣韻 [The grand rhyme dictionary reworked by the Great Song Empire]. Dongjing |東京 (Kaifeng), Song |宋 (China), 1008.

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