Altaic Languages

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Altaic Languages

History of research, survey, classification
and a sketch of comparative grammar

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0. Preface

There are at least three one-volume monographs devoted specifically to the bibliographic information about the Altaic linguistics in its time: Benzing 1953a; Poppe 1965; Rachewiltz & Rybatzki 2010, but these are only about the core Altaic branches, *viz*. Turkic, Mongolic and Tungusic (only Poppe had also included Korean). As the fourth one could be named the collective monograph *Altajskie jazyki*, ed. by Kononov, Sanžeev, Varduľ (1993), which is rather exceptional, since it summarizes both the bibliographic and grammatical information about the Turkic, Mongolic, Tungusic, Korean, Japanese (and even Ainu), and Altaic in general.

The present monograph, for simplicity henceforth called *Manual* (although this word does not appear in its title) concentrates on development of linguistic research in the Turkic, Mongolic, Tungusic, Koreanic and Japonic branches, first descriptive, later comparative. Special attention is paid to history of both the partial and general models of classification, overview of etymologies of the main ethno– and choronyms and the process of establishing the phonetic correspondences within and among the individual branches. For illustration of the common heritage the nominal and pronominal case systems were chosen as examples of the stable subsystems. A history of etymological analysis of the Altaic numerals is mapped in detail, including new solutions.

Our *Manual* originated in the cooperation of three linguists. Michal Schwarz came first with the idea to prepare a manual summarizing the state-of-the-art of Altaic diachronic linguistics, which was transformed into a successful grant project (2015) to finance publication of the *Manual*. His field of linguistic interests is the languages of the Far East, and their interferences with sociolinguistic consequences. Ondřej Srba, a specialist in both the literary and spoken languages of Central Asia and Far East, served as a universal consultant for questions connected with the Chinese historical sources and Mongolic and Manchu languages and literatures. Václav Blažek, who is responsible for the present shape of the text, concentrates on comparative linguistics in general, particularly on Indo-European etymology, but is also interested in questions of relations of the Indo-Europeans with their neighbors in Eurasia in the past. All three of us were influenced by various scholars, who gave us stimuli to be interested in Altaic linguistics in general or partially. For Ondřej Srba it was his teachers of Khalkha and Classical Mongol languages, Veronika Zikmundová and Jugderiin Lubsangdorji. Michal Schwarz was introduced to the problems of Central Asiatic history through the travelogues of Pavel Poucha and into Central Asiatic philology by his first teacher of Chinese, Mirek Čejka. The second impulse came from his Ph.D. supervisor, Václav Blažek, who inducted him into problems of mutual interactions of Central Asiatic languages in past and present, and the third one from the Koreanist and historian, František Honzák, who stimulated

him to write '{History of} Mongolia' (Schwarz 2010), realized during his course of Khalkha Mongol in Mongolia, and later transformed into the more detailed 'History of Mongolia', written in cooperation with O. Srba (Srba & Schwarz 2015). Václav Blažek, when he came to study mathematics and physics at Charles University in Prague in 1978, contacted first Vladimír Skalička (1909–1991), a former student of G.J. Ramstedt in Helsinki (1931/32), who was interested especially in typology of the Altaic (and many other) languages. Further it was Pavel Poucha[1] (1905–1986) and Jaroslav Vacek[2] (1943–2017), both interested (among others) in the Mongolic languages. Very important were personal contacts with Eugene Helimski[3] (Evgenij Xelimskij) and Sergei Starostin beginning of 1985 till their unexpected deaths in 2007 and 2005, respectively, plus their colleagues Anna Dybo and Oleg Mudrak till the present time, and Karl H. Menges in 1987, 1988 and 1996. In the same year 1996 Marek Stachowski (Kraków) stimulated him to prepare an article about the Altaic numerals for a newly founded journal *Studia Etymologica Cracoviensia*. Still before its publication in 1997 it was read by Karl H. Menges, Roy Andrew Miller and Gerhard Doerfer. Already in 1989 Václav Blažek met Alexander Vovin, who at that time still maintained the Altaic relationship including Korean and Japanese. The second meeting was realized in 2013 and continues in the form of exchange of contributions. Although Vovin changed from pro-Altaist into anti-Altaist at the turn of the new century, his publications always brought, and continue to bring, new and original solutions. For this reason they belong to the most frequently quoted bibliographic items here, together with works of Gerhard Doerfer. And finally in 2000 Václav Blažek got acquainted with Martine Robbeets. This contact, first supported by meetings at various conferences and in Leiden, was finally transformed into a regular cooperation in 2017, when Martine Robbeets invited the whole author team of the *Manual* to her Transeurasian project. For a collective monograph we have prepared the chapters about pronouns and numerals. They were originally written for our *Manual*, but the final shapes of results for each of the publications are different in agreement with rather different conceptions, although the chapters are naturally based on the same material. The Transeurasian project of Martine Robbeets is admirable not only for its broad scope, multidisciplinary approach, and depth of purpose, but also for cooperation of scholars of different opinions concerning the Altaic relationship without any prejudices, e.g. the optimist Anna Dybo vs. skeptic Volker Rybatzki. We feel the offer to participate as a great honor too, but on the other hand, we want to finish our obligation to make the results in both monographs more or less complementary.

1 See Schwarz & Blažek 2007.
2 See Oberfalzerová 2013; Schwarz & Blažek 2017.
3 See Blažek 2008b.

In the beginning of the *Manual* there were five series of articles, which became direct or indirect impulses for the origin of the book. As first should be named the review articles of important studies devoted to the Altaic etymology (Blažek 1987: Ramstedt's Korean etymologies from his heritage; 2005/2007: *EDAL*; 2006–07[2008]: Robbeets 2005). As second should be mentioned the informative articles devoted to the Mongolic, Turkic and Tungusic languages, their distribution, demography of their speakers, surveys of main models of their classification, elementary phonetic correspondences, plus basic bibliographies, all in Czech (Schwarz & Blažek 2010 {in English 2013}, 2011, 2012 respectively). In the present monograph the geolinguistic and demographic information from the articles is replaced by the most recent data from the 21st edition of *Ethnologue* (2018), and classifications, tables of phonetic correspondences and bibliographic data are significantly expanded, updated, and supplemented by the sections devoted to development of comparative phonetics in Turkic, Mongolic, Tungusic, and finally Altaic. In the third set of articles the nominal and personal pronominal case systems in all described Altaic languages were summarized, analyzed and on the basis of sequential reconstruction projected into partial protosystems and finally into the hypothetical common protosystem (Blažek & Schwarz 2014, 2015b: both in Czech; 2015c: Mongolic personal pronouns in English). The fourth group of articles is devoted to numerals, their internal structure and external comparisons identifying borrowings and inherited forms, first Altaic (Blažek 1997; included in *Habilitationschrift* – Blažek 1999, 102–140; republished in *Transeurasian Linguistics*, Vol. IV, ed. by Martine Robbeets, London: Routledge 2017, 26–65); further Korean (Blažek 2013), Mongolic & Tungusic (Blažek & Schwarz 2015a), Turkic (Blažek 2018: in Czech). The chapter Numerals in *Manual* represents a radically remade, supplemented and updated version of these contributions. Finally, the articles of the fifth group bring especially bibliographic information about history and development of Altaic linguistics, reflected in writings of great scholars like Karl H. Menges (Dolgopolsky & Blažek 2000), Sergei Starostin (Bengtson & Blažek 2005), Eugene Helimski (Blažek 2008b), Anna V. Dybo (Schwarz & Blažek 2014), Gerhard Doerfer (Schwarz & Blažek 2015), or as a partial survey devoted to an individual branch such as Tungusic (Blažek & Schwarz 2018). They should be supplemented by the philological study about the so-called Čingis-Stone by Srba (2012) and 'History of Mongolia' by Srba & Schwarz (2015), both in Czech.

These preparatory studies partially anticipated the contents of the *Manual*:

History of the Turkic, Mongolic, Tungusic, Koreanic, Japonic and Altaic comparative linguistics.

Geographic and demographic survey of the modern Turkic, Mongolic, Tungusic, Korean and Japanese & Ryukyu languages.

Models of classification of the Turkic, Mongolic, Tungusic, Koreanic, Japonic languages, plus Altaic in general.

Etymological analyses of the main ethnonyms or choronyms: Türk, Mongol, Tungus, Korea, Japan & Wo.

Survey of the phonetic correspondences of the Turkic, Mongolic, Tungusic languages, plus Altaic in general, according to various authors.

Nominal case system in the Altaic languages.

Pronominal case system in the Altaic languages.

Altaic Numerals in etymological perspective.

Detailed bibliography.

Although the monograph is intended as a synthesis comparing different ideas, hypotheses, etymologies of various scholars or even schools, there are passages or whole chapters, where besides summarized data and existing solutions new ideas or etymologies are proposed, namely in the chapters about the ethnonyms, nominal & pronominal case systems and numerals. On the other hand, the historical surveys of development of individual Altaistic disciplines are also new. And the same ambition was applied to bibliographic data – besides the mapping of the early beginnings of all studied disciplines the most recent titles known to us are included. Most of the titles are written in European languages, including Slavic or Hungarian languages, but we have also included the important titles in Turkish, Khalkha Mongol, Korean, Japanese and Chinese.

We should also explain, what one should not expect in the *Manual,* and why. It does not include comparative lexical data, illustrating phonetic correspondences. These data were already summarized by the classics Ramstedt (1957a) and Poppe (1960), supplemented by Miller (1968, 1970, 1975a, 1987), Street (1980a, 1985), modified by Starostin (1991) and his team (*EDAL* 2003; Mudrak 2008), and reanalyzed and reinterpreted by Robbeets (2005b, 2008, 2014a, 2016a, 2017a). Any new analysis would require a new monograph reviewing the preceding studies, but this has convincingly been done just by Martine Robbeets. There is also nothing about word formation. Again, this was already covered in the classics such as Ramstedt (1912, 1952/1957b) and Poppe (1972). And finally, the Altaic verb is quite disregarded here. Besides the classic contributions of Ramstedt (1933–1935, 1952/1957b) there is a long series of impressive studies by Martine Robbeets, which shift the comparative analysis of the Altaic (Transeurasian in her terminology) verb to a new and higher quality (Robbeets 2007b, 2007c, 2010, 2012, 2014c, 2014d, 2015, 2016a, 2017g). We also did not include the information about scripts of the literary languages. This was done very well already by Poppe (1965) and Rachewiltz & Rybatzki (2010), plus Róna-Tas (1991) for Turkic. Finally, the questions of hypothetic external relations of the Altaic languages are not solved here, perhaps with the exception of bibliographic references to the position of Ainu, whose affiliation in Altaic proposed by Patrie (1982) was convincingly criticized by Street (1983) and Xelimskij (1984). We prefer the inclusion of Ainu in Austric (cf. Gjerdman 1926; Vovin 1993; Bengtson & Blažek 2009).

Several notes about terminology: We use the traditional term 'Altaic' in its broader sense, i.e. 'Macro-Altaic', as a common ancestor of five branches, Turkic, Mongolic, Tungusic, Koreanic and Japonic, and parallelly as designation of the language macrofamily consisting of these five branches. The term 'Transeurasian' was introduced by Martine Robbeets, while 'Altaic' returned according to her to Turkic, Mongolic, Tungusic, i.e. 'Micro-Altaic'. This solution is more logical and in principle resembles the situation with the Austronesian family, originally called 'Malayo-Polynesian' from the time of Wilhelm von Humboldt (1836–39). The term 'Austronesian' was introduced by Wilhelm Schmidt in 1899 as more or less synonymous. Robert Blust (1978) returned 'Malayo-Polynesian' into play, but in the narrower sense, as the Austronesian languages without the pre-Chinese languages of Taiwan (Formosa). Let us mention that another representative of the Leiden school of comparative linguistics, George van Driem, offered the parallel term 'Trans-Himalayan' for Sino-Tibetan (2001). We keep the traditional term (Altaic) as an expression of our honor to the classical scholars like Castrén, Ramstedt and Poppe. The term 'Turkic' means for us the whole family including Bulgar-Čuvaš. The innovative mainstream after separation of the Bulgar-Čuvash branch is called Late Common Turkic by us. Following Janhunen, we prefer the term 'Mongolic' with the same ending as 'Turkic' and 'Tungusic'. We find Kitan to be an integral member of the Mongolic family and use the term Para-Mongolic only to quote or comment on Janhunen's ideas. We prefer 'Tungusic' to 'Manchu-Tungusic' or 'Tunguso-Manchurian'. 'Koreanic' means Modern Korean including Chejudo, Late & Early Middle Korean and the Old Korean fragments from the states of Silla, Paekche (Baekje) and Koguryŏ (Goguryeo). 'Japonic' summarizes the modern Japanese dialects (including Hachijo) developed from West or East Old Japanese with the border line going through Nagoya, Ryukyuan dialects and the Japanese-like substratum relics from the southernmost Korean Cheju Island and Old Korean states Koguryŏ, Paekche, Silla, etc.

Concerning transcription, we usually keep the orthography of the primary sources. For transcription of Modern Chinese appellatives and proper names the *pinyin* system of romanization is applied, for Japanese the revised Hepburn system, for Korean Revised Romanization. On the other hand, we write the proper names in Slavic languages and almost all glottonyms with *č*, *š*, *ž* and not *ch*, *sh*, *zh*. The exceptions are some well-established language-names as Manchu, Jurchen, or some glottonyms from the Chinese milieu as Hezhen.

Acknowledgement

We are grateful for the manifold help of scholars already named, especially to Martine Robbeets, Alexander Vovin, Anna Dybo, Oleg Mudrak, Sergej Starostin†, Eugene Helimski†, Karl H. Menges†, Roy A. Miller†, Aaron Dolgopolsky†, Jaroslav Vacek†, Pavel

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4 Let us mention that the generally respected Indo-Europeanist Jochem Schindler was also active in Altaic comparative linguistics (Schindler 1966). But this tradition goes all the way back to Holger Pedersen (1903).

1. History of recognition of the Altaic languages

1.1. History of descriptive and comparative research of the Turkic languages

1.1.0. Bibliographic survey of Turkic linguistics

As the best surveys of Turkology may be recommended (in chronological order) e.g. Benzing 1953a, 61–131; Poppe 1965, 23–73; Gadžieva, Levitskaja & Tenišev 1981; Stachowski 2008; Rachewiltz & Rybatzki 2010, 5–135.

1.1.1. Beginning of description of the Turkic languages

The earliest descriptions of the individual Turkic languages may be arranged according to the languages which were used for these lexicographic[5] or grammatical works.

Arabic

The first known Turkic lexicographic study originated directly in the Turkic milieu with regard to origin of the author, **Maḥmūd al-Kāšġarī**. In reality, he compiled his "Compendium of the Turkic Dialects" (*Dīwān luġāt at-Turk*) in the center of Islamic culture, Baghdad, in 1072–1076, where he moved after travelling through many countries of the then Turkic world in the late 1060s. His *Dīwān* contains more than 7,500 Turkic (more precisely Karakhanid) lexemes with their Arabic equivalents. See e.g. Brockelmann 1928; Dankoff & Kelly 1982–85.

The grammarian and theologian **Abū Ḥayyān al-'Andalusī** completed the compendium of the Mamluk-Kipčak lexicology, morphology and syntax under the title *Kitāb al-'idrāk li-lisān al-'Atrāk* [Book of The Realization of the Language of the Turks] in 1335 (edited by Ahmet Caferoğlu, Istanbul: Evkaf Matbaası, 1931; cf. Ermers 1999, 305; Pendse 2015, 36). The Kipčak-Oghuz lexical material also appears in the so-called 'Rasūlid Hexaglott' (compiled for the sixth Rasūlid king of Yemen, al-Malek al-Afḍal al-ʿAbbās who reigned 1363–1377), consisting of *c*. 1,800 entries in Arabic, Persian, Turkic (Kipčak-Oghuz), Middle Greek, Cilician Armenian, and Middle Mongol – see Golden 2000. Some other lexicographic works from the Mamluk era in the 14th cent. are *Bulġat al-muštāq fī luġat at-turk wa-l-qifžāq* [Book written for those which wish to learn Turkish and Kipčak languages] by **'Abd Allāh Ğamāl al-Dīn al-Turkī Abū**

5 A comprehensive survey of the Turkic lexicology was compiled by Eminoğlu 2010. Cf. also Loewenthal 1957.

Muḥammad (see Zajączkowski 1954–1958), and *Ad-Durrah al-muḍīʾah fī al-luġah al-Turkīyah* [The luminous pearl of the Turkish Language] (cf. Zajączkowski 1965, 1969; Ermers 1999, 40; Pendse 2015, 38). The manuscript *Tuḥfah al-zakīyah fī al-luġah al-Turkīyah* [Precious jewel of the Turkish language], containing both Turkish grammar and lexicon consisting of *c*. 3,600 words organized as nouns, verbs, etc., was probably completed in the end of the 15th cent. (see Halasi-Kun 1942; Turkish translation by Atalay 1945; cf. also Fazylov, Zijaeva & Kononov 1978, and Pendse 2015, 37).

Persian[6]

There are several manuscripts of Persian-Turkish dictionaries compiled during 14th-16th cent., e.g.

Ṣeḥāḥ al-ʿAjam by **Faḵr-al-Dīn Hendūšāh b. Sanjar Naḵjavānī** (*c*. 1330; ed. Ḡ.-Ḥ Bīgdelī, Tehran, 1982).

Wasīlat-al maqāṣed by **Ḵaṭīb Rostam Mawlawī** (compiled 1497);

Toḥfa-ye Šāhedī, a short dictionary in verse composed in 1514 by **Ebrāhīm b. Ḵodāydede Šāhedī Qūnawī** (died 1550);

Ṣeḥāḥ-e ʿajamīya or *Seḥāh al-ʿAjam* by **Moḥammad b. Pīr-ʿAlī Bergavī** (died 1573). This dictionary was originally a Persian-Arabic lexicon with interlinear Turkish translation.

Turkish

In spite of its Arabic title the first, and for long time the only, grammar of Turkish written in Turkish is *Muyassiratu-l-ʕulūm*, from **Berġamalī Qadrī** (1530).

Chinese

During the Ming Dynasty (1368–1644) there were compiled several glossaries of non-Chinese languages, together designated 華夷譯語 *Huá-yí-yì-yǔ*, including Old Uyghur dated to the 15th cent. (see Ligeti 1966, 1969).

Manchu

Probably in 1792, during the Manchurian Qing dynasty, a five-language dictionary, in Europe called *Pentaglot,* was completed. Its Chinese name 御製五體清文鑑 *Yù zhì wǔ tǐ Qīng wén jiàn* means "Imperially-Published Five-Script Textual Mirror of Qing". There the lexicons of five important languages of the Qing Empire are summarized, Manchu, Tibetan, Mongol, Turki (= post-classic Čaghatai), and Chinese. See Corff et al. (2013).

6 <http://www.iranicaonline.org/articles/dictionaries>.

Latin

The text called ***Codex Cumanicus***, whose origin may be dated to 1292/3–1295, consists of two parts: (a) 'Interpretor's Book', containing a comparative sketch of Latin, Persian and Cumanic grammar, plus Italo-Latin, Persian and Cumanic glossaries; (b) 'Missionaries' Book' in Eastern Middle High German, bringing a collection of Cumanic puzzles, sermons, psalms, etc. Part (a) was probably compiled by Venetian or Genoese merchants, the authors of part (b) were probably German Franciscans. Further see e.g. Kuun 1880/1981; Grønbech 1942; Golden 1992; Garkavec 2006.

Probably the first printed information about the Turkish language for European readers was mediated by the Croatian priest of Slovene origin, **Bartolmej Georgijević** (1506–1566), who spent nine years in Turkish captivity after the battle by the Mohács (1526). In the book *Pro fide Christiana cum Turca disputationis* .. there are a brief Turkish-Latin glossary arranged according to semantic fields (fol. 21–24), a fictitious dialogue between a Turk and a Christian (fol. 25), and numerals (fol. 26–28). The book *De Turcarum moribus epitome* (1553, 1558, 1560) explains many Turkish terms in context of Muslim religion, habits, etc.

During the 17th cent. the number of lexicons and grammars written in Latin grows. The first European compendium of the Turkish language, consisting of grammar, texts and Latin-Turkish & Turkish-Latin vocabularies, was published by **Hieronymus Megiser** in Leipzig & Wrocław in 1612. The second influential Turkish grammar was published by the orientalist **André Du Ryer** in Paris (1630, 1633; see also Hamilton & Richard 2004). He was followed by **Francesco Maria Maggio** (Roma 1643, 1670). In 1670 the first Turkish grammar in the British Isles was published by **William Seaman** in Oxford. The most extensive compendium of the Turkish (plus Arabic and Persian) lexicon, including grammar, in the 17th cent. was published by the French (naturalized in Poland) **Franciscus à Mesgnien Meninski** (**Franciszek Meniński**) in Vienna in 1680–1687. He learnt Turkish, when he accompanied the Polish ambassador to the High Porte in 1653. Later he moved to Vienna and became interpreter to the Emperor of Austria. His Turkish grammar was published again in 1756 and dictionary in 1780–1802. A witness of value of his lexical data follows from the fact that the Turkish material from his *Lexicon* was published by **Stanisław Stachowski & Mehmet Ölmez** once more in 2000. **Johann Christian Clodius** published his Turkish grammar and lexicon in Leipzig in 1729 and 1730 respectively.

Italian[7]

Italian is the first living West European language, which served for both grammatical and lexicographic description of Turkish. The first grammar was written by **Philippo**

7 See Kurtböke 1994.

Argenti in Constantinople already in 1533 (cf. Rocchi 2007), the second one by **Pietro della Valle** in Iṣfahān in 1620. The first Turkish-Italian glossary was included in the anonymous text, called *Opera a chi se delettasse de saper domandar ciascheduna cosa in turchesco*, which was printed in 1525 and again 1530 (see Adamović 1975). The second lexicographic work, again an anonymous text called *Vocabulario nuovu – Italiano e Greco, Italiano e Turco, & Italiano e Tedesco*, was printed in Venetia in 1567(?), 1574, 1580, 1587, 1599 (see Adamović 1976). The third one is a part of the manuscript *Vocabolario italiano e arabesco, con alcuni Dialoghi in turchesco e in greco moderno*, also dated to the 16th cent. (see Rocchi 2016). The first real dictionary of **Pietro Ferraguto** (1611) remained as a manuscript (see the modern edition of Rocchi 2012). The same may be said about the dictionary of **Arcangelo Carradori** (1650; edited by Rocchi 2011). There are at least three Italian-Turkish printed dictionaries from the 17th cent., namely **Giovanni Molino** 1641; **Bernardo Da Parigi** 1665; **Antonio Mascis** 1677. Especially the dictionary of Bernard de Paris, known in Italy as Bernardo Da Parigi (1665), represents a valuable contribution to the Anatolian Turkish lexicon, which was not attested elsewhere (cf. Rocchi 2015). Remarkable is the notice from the subtitle about translation from a French original by Pietro d'Abbauilla, but it is not known, if Bernard de Paris had really finished his French-Turkish dictionary.

French

Similarly, in France the first Turkish grammar was published in Latin by André Du Ryer already in 1630, while the first French grammar was edited a century later by the Jesuit **Jean-Baptist Holdermann** (Constantinople 1730). It was the first book printed in Latin letters in Turkey, followed by **Jean-François Viguier** (Constantinople 1790). His Turkish grammar **Joseph de Preindl** (Berlin 1790) supplemented by a vocabulary. The Greek **Georges Rhasis** published a French-Turkish dictionary in Saint Petersburg (1828–1829). The Armenian born in Istanbul, **Artin Hindoğlu**, is the author of two other French-Turkish & Turkish-French dictionaries (Vienna 1831 & 1838), besides his grammar of Turkish spoken in Istanbul (Paris 1834), which was translated from his German original (Vienna 1829). Practically at the same time appeared the French-Turkish dictionaries of **Thomas-Xavier Bianchi** (Paris 1831, 1843), Turkish-French by **Jean Daniel Kieffer & Thomas-Xavier Bianchi** (Paris 1835) and French-Arabic-Persian-Turkish by **Alexandre Handjéri** (Moscow 1841). The French translation of **Davids'** grammar of Turkish was edited in London in 1836. It is interesting that the British orientalist **James W. Redhouse** published his Turkish grammar first in French (Paris 1846) and only later in English. In 1869 in Saint Petersburg **Vladimir Véliaminof-Zernof** published his French version of Čaghatai-Turkish dictionary. He was followed by **Abel Pavet de Courteille**, who called Classical Čaghatai *Turk-Oriental* in his dictionary.

English

Although the first British grammar of Turkish was published by William Seaman already in 1670, it was written in Latin, and so the priority of the first Turkish grammar in English belongs to **Thomas Vaughan** in 1709. The second Turkish grammar in English was written by 20–year-old **Arthur Lumley Davids** and published in 1832, three weeks before his death. His mother **Sarah Davids** prepared the French translation of his Turkish grammar (1836). **James W. Redhouse** is the author of several Turkish grammars (e.g. 1855, 1884a), besides the English-Turkish & Turkish-English dictionary (1856) and English-Turkish dictionary for Turks (1860, 1884b). **Robert Barkley Shaw** (1877 = 1878, 1880) as first brought more detailed information about grammar and lexicon of Turki (New Uyghur).

German

The first Turkish grammar and lexicon published in German speaking countries was written in Latin by Hieronymus Megiser (born in Stuttgart) and printed in Leipzig in 1612. And so the first Turkish grammar written in German probably became the book of the Armenian **Artin Hindoğlu**, published in Vienna in 1829. The first dictionary of Turkish with German equivalents (*Lexicon Latino-Turcico-Germanicum*) was edited by **Johann Christian Clodius** in Leipzig 1730. From the 19th cent. German was frequently used by orientalists of different mother languages. Let us mention especially the publications of the Hungarian **Herrmann (Ármin) Vámbéry**: his German-Turkish dictionary (1858), or studies devoted to Čaghatai (1867) and the Sart variety of Uzbek (1890), followed by **Ignaz Kúnos**' edition of Čaghatai-Turkish dictionary (1902), besides Azerbaijani studies of **Karl Foy** (1903–1904). Other numerous titles written in German are discussed in the comparative section below.

Russian[8]

If Western and Central Europe was oriented toward Turkish as the most important Turkic language on its border, in Russia a Turkic language with the highest number of speakers was (and is) Tatar. The first Russian-Tatar vocabularies were compiled already in the 17th-18th cent., but they remained as manuscripts (see Nugman 1969). Probably the first printed handbook of Kazan Tatar in Russian was the dictionary and brief grammar edited by **Sahit Xalfin** (Kazań 1785). His grandson **Ibragim Xal'fin** (1809) continued in his work. **Josif Giganov** (Sanktpeterburg 1801a, 1801b, 1804) concentrated on the language of the Siberian Tatars from Tobolsk. Another Tatar grammar was published by **Aleksandr Trojanskij** (Sanktpeterburg 1814). **Trojanskij** is also the author of the two-volumed Tatar dictionary (1833–1835). A new grammar of Kazan Tatar was published

8 See Kononov 1972/1982; 1974/1989.

by the Armenian **Lazaŕ Z. Budagov** in Tbilisi (1844). **S. Kukljašev** (1859) edited a vocabulary to Tatar textbook. **Nikolaj I. Il'minskij** published his Tatar phonology (1859) and participated in preparation of a Tatar-Russian dictionary with **N. Ostroumov** & **A.A. Voskresenskij** (1892). **Voskresenskij** (1894) published a Russian-Tatar dictionary, likewise **Abdülkayyum Nâsirî** (1892, preceded by his Tatar-Russian dictionary from 1878) and **S.M. Ganiev** (1897).

The first Turkish dictionaries were published in Russia by **Georges Rhasis** in Saint Petersburg (1828–1829) and by **Alexandre Handjéri** in Moscow (1841), but both in French. **Lazaŕ Z. Budagov** edited his handbook of Azerbaijani in Moscow in 1857. In 1850s and 1860s a missionary **Nikolaj I. Il'minskij**, a disciple of the founder of Turkology at Kazan University, Mirza Alexandr Kazem-Bek, published several important studies devoted to various Turkic languages from both descriptive and comparative points of view. First was the edition of *Babur-nameh* written in Čaghatai (1857), which became a base of his study about Čaghatai declension (1863b). Further materials of Kazakh {called by him Kirgiz} (1860–61), Turkmen (1863a; see Blagova 2005), Altai grammar (1869), followed by the Altai/Oirot dictionary of **Verbickij** (1884). Vladimir V. Veľjaminov-Zernov published the Russian version of a Čaghatai-Turkish dictionary (Saint Petersburg 1868). The first handbook of Čuvaš in Russian, containing the grammatical rules and vocabulary, was published by **Višnevskij** (1836). A Čuvaš-Russian dictionary was edited by **N.I. Zolotnickij** (Kazań 1875), including the external comparanda from other Turkic or neighboring Fenno-Ugric languages. After him it was especially **N.I. Ašmarin**, who was interested in Čuvaš (1898, 1902), including the biggest of all dictionaries of Čuvaš (1928–1950). A series of Uzbek dictionaries was published by **Išaev** (1880), **Nalivkin & Nalivkina** (1884) and **Lapin** (1895) – in the first two cases the glottonym *Sart* was used. **Iš-Mehmet Bukin** (1883) completed probably the first Kazakh dictionary with later expanded versions (1894, 1897, 1899), yet not differentiating Kazakh from Kirgiz. In the same year 1893 **M.V. Moxir** edited a Kumyk-Russian dictionary, while a Russian-Kumyk dictionary was edited by **M.G. Afanasjev**. **Vasilij Katarinskij** (1899) published a Baškir-Russian dictionary.

Hungarian

Hungarian orientalists and linguists usually used German in the 19th cent. and Latin earlier, but there are several titles written in Hungarian too, e.g. Čaghatai dictionary (1862) or Turkic Etymological Dictionary (1877) by **Ármin (Hermann) Vámbéry**, both later published also in German, or Kazan Tatar dictionary and grammar by **Gábor Bálint** (1876, 1877), Čuvaš studies and Turkic elements in Hungarian by **József Budenz** (1862–1863; 1873) and the same two topics by **Bernát Munkácsi** (1887–1890a/b) and the Finnish **Heikki Paasonen** (1908; 1913). **Wilhelm Pröhle** is the author of Baškir linguistic studies (1903–1905).

1.1.2. The beginning of Turkic comparative studies

The beginning of comparative Turcology can be traced to multiple wordlists compiled or collected by the first authors, who tried to map the linguistic situation in inland Eurasia from the end of the 17th century. Comparisons of these wordlists allowed these pioneers to determine the apparently genetically related language groups and borders between them, namely e.g. Turkic, Mongolic, Tungusic. Let us repeat the most important results in chronological order.

Witsen (1692; quoted according to the 2nd edition from 1705) recorded 556 Crimea-Tatar words (pp. 578–583) and 63 Yakut words, including numerals 1–20, 30–100, plus the *Paternoster* with a Dutch translation (pp. 677–78). He mentioned the relationship of the Yakut language with other Turkic languages (Witsen 1705, 884): *waer langs, als mede op de Vlieten die in de zelve Zee uitstorten, de Jakuti zich ophouden, die een Tartersch Volk zijn, en een zeer gebrooke Tartarische Spraek spreken*. "Along it and along the rivers emptying into this sea there are Yakuts living, who are a Tartarian people. They speak a strongly broken Tartarian language." **Strahlenberg** (1730; English edition 1738) compared three Turkic wordlists, Siberian Tatar (Tobolsk, Tiumen, Tara), Yakut and Čuvaš, and stated that the Turks as Uzbeks & Kirgizes and Turkmens used the same dialects as the Siberian Tatars, Yakuts and Čuvaš' in the appendix *Harmonia linguarum* to his book *An Historico-geographical Description of the North and Eastern Parts of Europe and Asia*. **Fischer** used the lexical data of 9 Turkic languages in his *Vocabularium Sibiricum* (1747), namely 'Bucharisch' (originally an Uzbek dialect, which was Tatarized in Siberia), Čulym Turkic, 'Tschat-Tatarisch' (spoken around Tomsk), Čuvaš, Tobol-Tatar, Šor, Teleut, Kazan-Tatar, Khakas. **Fischer** (1747/1995, 31) judged that 'Tschuwaschen – ihre sprache hat mit der tatarischen vielen gemein, ist aber ihrem ursprung nach tschudischen.' In his *Linguarum totius orbis vocabularia comparativa*, I-II, **Pallas** (1787–89) collected the lexical material consisting of 273 lexemes, plus numerals, of 20 Turkic languages or dialects, namely Turkish, Tatar of Kazan, Tatar Meščeriak, Tatar Baškir, Tatar of Taurida (= Crimea), Tatar of the Caucasus, Tatar of Tobolsk, Tatar of Čatsk, Tatar of Čulym, Tatar of Enisei, Tatar of Kuznetsk, Tatar of Baraba, Kangat, Teleut, Bukhara, Khiva, Kirgiz, Trukhmen, Yakut, plus separately Čuvaš, included between the Čeremis (= Mari) and Votyak (= Udmurt) languages. **Adelung** (1806, 495) included Čuvaš among the Turkic languages. He explicitly wrote: 'Unter den 200 {Tschuwassischen} Wörtern im Müller sind wenigstens 60 Tatarisch. Auch der grammatische Bau ihrer Sprache weicht von der Tatarischen nur als Mundart ab.' **Klaproth** (1812–14) published wordlists of the Turkic languages from the Caucasus, namely Kumyk and Karačai, and described the language and script of the Uyghurs (vol. II, pp. 481–576; cf. Menges 1968/1995, 2), demonstrating the Turkic affiliation of Old Uyghur. In 1822 he also published the Old Uyghur vocabulary. Probably **Klaproth**

(1828) first demonstrated that Čuvaš was a Turkic language, comparing several dozen words in Čuvaš with counterparts in Tatar and some other Turkic languages. **Rémusat** (1820, 249–329) studied the historical circumstances of appearance of the Uyghurs and also offered a brief grammatical sketch of their language. **Schott** wrote about Čuvaš (1841, with the French translation 1876b; 1843a), Yakut (1843b), Old Uyghur (1874, 1876a). **Kazem-Bek** (1839, 1846; German translation 1848) presented probably the first comparative grammar of the Turkish languages or in his perspective, dialects of one common Turkic language. Its German translation was very popular in Western Europe during the 19th century. He compared Osman Turkish, Azerbaijani, and Tatar of Kazan, Orenburg and West Siberia, i.e. the representatives of the Oghuz and Kipčak branches. **Böhtling** (1851), thanks to his erudition in Sanskrit, was able to apply the methodological approach developed for the Indo-European family to Yakut in Turkic context. **Il'minskij** (1861) prepared for his Turkologic lectures an intruductory course, which was in reality also a sketch of a comparative grammar of the Turkic languages. **Il'minskij** (1865) analyzed specific phonetic correspondences between Čuvaš and other Turkic languages. **Budagov** (1869–1871) published the first comparative dictionary of the Turkic languages. Rather surprising is his universal use of the Arabic script for transcription of all compared Turkic languages. He was followed by **Vámbéry**, the author of the first attempt at a Turkic etymological dictionary (Hungarian 1877; German 1878). His dictionary was organized on the root pattern, as in Arabic or Sanskrit lexicons. The main deficiency was a frequent etymological incompatibility of many forms included in the same lemma. The choice of languages was also rather limited: Old Uyghur, Čaghatai, Yakut, Altai/Oirot, Osman Turkish regularly, and Čuvaš, Kazan Tatar, Kazakh, Kirgiz, Azerbaijani and Turkmen occasionally. For this task Vámbéry prepared earlier several lexicographic and comparative studies devoted to Čaghatai (Hungarian: 1862; German: 1867) and Old Uyghur (1870a, 1870b). In a special monograph, where he discussed reflexes of the Turkic culture in lexicon, Vámbéry (1879) anticipated the method *Wörter und Sachen*.

1.1.3. Old Turkic language and script – discovery and development of research

The Swedish **Philip Johan Tabbert**, better known as **Strahlenberg** (1730), mediated the first information about a runic-like inscription on stones on the bank of the Yenisei. Not until the end of the 19th cent. was the number of described inscriptions sufficient to be deciphered, also with help of some bilingual texts, in which the second language was Chinese. The successful decipherment was realized by the Danish scholar **Vilhelm Thomsen** in 1893 and fully presented in 1896 and 1916. His rival **Wilhelm Radloff** summarized his results and comments of other Turcologists in 1895, and in 1897 he added the first Old Turkic grammar and later further studies (1909–1912). This discov-

ery of the oldest epigraphic Turkic language founded a new discipline in Turkology, Runic studies. After Radloff's grammatical sketch came **Annemarie von Gabain** with her *Alttürkische Grammatik*, published three times, in 1941, 1950 and 1974. Till 1969, when *Drevnetjurkskij slovar'* appeared, it also offered the best Old Turkic glossary. After 1950 several new grammatical descriptions were published, in alphabetical order e.g. **Ajdarov** 1971; **Erdal** 1991, 2004; **Kondratjev** 1981; **Kononov** 1980; **Kormušin** 2008; **Nasilov** 1961; **Tekin** 1968, 2003, besides studies analyzing the inscriptions or runiform script, e.g. **Brockelmann** 1952; **Clauson** 1970; **Kormušin** 1997; **Kyzlasov** 1990; **Malov** 1959; **Pritsak** 1980; **Scharlipp** 1994; **Ščerbak** 2001. The Old Turkic lexicon was best summarized in *Drevnetjurkskij slovar'* by **V.M. Nadeljaev, D.M. Nasilov, Ė.R. Tenišev & A.M. Ščerbak** (Leningrad: Nauka 1969) and by Sir **Gerard Clauson** in his *An etymological dictionary of pre-thirteenth-century Turkish*, (Oxford: Clarendon Press 1972).

1.1.4. Turkic etymological dictionaries

Besides many others **Radloff** also wrote two studies devoted to comparative phonology of Turkic (1882; 1901). Most important is his comparative Dictionary of the Turkic languages (1893–1911), which serves till the present time. The Armenian **Bedros Kerestedjian** (1912/1971) compiled material for an etymological dictionary of Turkish. But his attempt is worse than incompetent. There are no comparanda from other Turkic languages, while parallels from Sumerian, Akkadian or Basque belong to those most beloved by the author. In recent time several modern Turkish etymological dictionaries were published, e.g. **Eyuboğlu** 1988/1991/1995/1998/2004; **Eren** 1999b; **Tietze** 2002–2010; **Nişanyan** 2007; **Kanar** 2010. There are etymological dictionaries[9] also for some other individual Turkic languages: Azerbaijani – **Əhmədov** 1999; Baškir – **Garipov** and **Garipov & Nafikov** 2007–2009; **Nafikov** 2008; Čuvaš – **Egorov** 1964; **Fedotov** 1996; Gagauz – **Rajki** 2007 (only a very laconic comparative vocabulary, available online); Kazan Tatar – **Axmetjanov** 2001; Kirgiz – **Sejdakmatov** 1988; Tuva – **Tatarincev** 2000–2008; Yakut – **Popov** 2003; see also **Kałużyński** 1995 and **Stachowski** 1993 for Dolgan. A relatively comfortable situation may also be observed in the case of the etymological dictionaries of the Turkic languages as a whole. There are dictionaries of **Räsänen** (1969–1971); **Clauson** (1972); **Sevortjan** (1974: vowels; 1978: *b*; 1980: *v*, *g*, *d*), **Sevortjan & Levitskaja** (1989: *ǯ*, *ž*, *j*), **Levitskaja, Dybo, & Rassadin** (1997: *q*), (2000: *k*), **Levitskaja, Blagova, Dybo & Nasilov** (2003: *l, m, n, p, s*). These dictionaries differ in their conceptions. Räsänen operated with proto-Turkic reconstructions and sought mutual relations between lexemes, including external relations

9 See https://az.wikipedia.org/wiki/Etimoloji_l%C3%BC%C4%9F%C9%99t

in frame of Ramstedt's and Poppe's Altaic theory and his own Uralo-Altaic hypothesis. In this perspective it is a real etymological dictionary. Its weakness consists in incomplete lexical material and limited information about primary sources. On the other hand, the dictionary of Clauson should be better called comparative, while Sevortjan stands between Räsänen and Clauson. Clauson limited his dictionary to Old and Middle Turkic languages, only with occasional comparanda from modern languages[10]. He quoted systematically the primary sources of epigraphic and literary monuments, including their chronologic determination. There are minimal attempts at any etymological explanation and no external comparisons with respect to his well-known negative position on the Altaic theory (naturally, with exception of some borrowings). Sevortjan et alii offer a detailed information about sources not only of the Old and Middle Turkic languages, but every quoted form from modern Turkic languages is also accompanied by bibliographic data. If the first volumes, written still by Sevortjan, contain only etymologies mediated from other authors, the more recent volumes also bring some etymological solutions by new authors in the context of discussion of existing etymological attempts. Let us mention that the "Old Turkic Dictionary" (*Drevnetjurkskij slovar'*; abbreviated as *DTS*) by **Nadeljaev, Nasilov, Tenišev & Ščerbak** (1969) has the same conception as Clauson's dictionary, but it is not designated as etymological. In any case, in etymological research it is useful to combine the strong features of all four dictionaries. With regard to the big impact of the Turkic languages on their neighbors it is important to study the Turkic borrowings in the neighboring languages. A textbook example of a study of this type is the four-volumed compendium *Türkische und mongolische Elemente im Neupersischen* by **Gerhard Doerfer** (1963–1975), usually abbreviated as *TMEN*, which may be used with great benefit as an etymological lexicon of the lexemes discussed. Probably the most recent study mapping the Turkic influence on a non-Turkic language one should mention *West Old Turkic: Turkic Loanwords in Hungarian* by **Berta & Róna-Tas** (2011), following the classical study of **Gombocz** (1912).

1.1.5. Turkic comparative grammars

The recent developments in the field of a comparative grammar of the Turkic languages (or part of them) began with two scholars, the Turkish linguist **Emre** and Finnish linguist **Räsänen**, who published their own comparative phonetics of the Turkic languages in the same year 1949. Six years later the phonetic study by **Räsänen** was translated into Russian (1955a). The author himself continued in his effort and in the same year published his comparative morphology of the Turkic languages (1955b). Similarly **Ščerbak** after his

10 The most recent Old Uyghur dictionary of Röhrborn, better to say both beginnings (1977–1998; 2010–2015), bring no comparative material even in the frame of Turkic.

comparative Turkic phonetics (1970) also added his comparative Turkic morphology of noun (1977), verb (1981) and adverbs, auxiliary words, onomatopoia (1987). The Turkic comparative grammars from the following years are also written in Russian: **Serebrennikov & Gadžieva** (1979), **Tenišev** (1984: Phonetics, 1986: Syntax, 1988: Morphology, 1997 & 2001: Lexicon), with new modifications published in the first decade of the 21st century. The original study about Čuvaš vocalism in a broader Turkic perspective from **Oleg Mudrak** (1993) and more traditional Čuvaš historical phonetics by **Lija Levitskaja** (2014) should be also mentioned. The new Comparative grammar of Turkic languages, edited by **Tenišev** in 2002, has the subtitle "Regional reconstructions", which indicates the specific content of the book. It is organized into seven parts, representing partial comparative grammars of individual Turkic branches, namely Oghuz (written by **A.V. Dybo, L.S. Levitskaja, Ė.A. Grunina**), Kipčak (**K.M. Musaev, A.A. Čečenov**), Karluk-Uyghur (**D.M. Nasilov, G.F. Blagova**), Kirgiz (**Ė.R. Tenišev**), Toba (**I.V. Kormušin**), Yakut (**O.A. Mudrak**), Bulgar (**O.A. Mudrak**). The following volume, edited by **Tenišev** (posthumously) and **Dybo** (2006), probably represents the most ambitious one-volumed diachronic description of the Turkic languages. It consists of the detailed Turkic comparative phonetics by **A.V. Dybo & O.A. Mudrak** (pp. 9–227), nominal morphology by **A.V. Dybo** (228–239), verbal categories by **I.V. Kormušin** (240–267), verbal derivation by **D.M. Nasilov** (268–325); Lexicon: Sky, celestial phenomena, climate by **K.M. Musaev** (326–371); Geographic milieu by **I.G. Dobrodomov** (372–386); Flora by **Ju.V. Normanskaja** (387–435); Agriculture by **I.V. Kormušin** (436–437); Settlement by **I.G. Dobrodomov** (438–454); Dwelling by **A.V. Dybo** (455–476); Material culture, clothing, war, weapons, social organization, family relations by **K.M. Musaev** (477–561); Spirituality and rituals by **R.A. Tadinova & Ė.N. Ėkba** (562–628); Symbolism of numbers, reconstruction of fragments of texts, witness on poetic speech, metric schemes by **Ė.R. Tenišev** (629–647); Anthropomorphic and zoomorphic metaphors in the Turkic languages by **A.V. Dybo** (648–659); Anthroponymic system as a projection of cosmologic and social imaginations of the early Turks by **G.F. Blagova** (660–765). Chronology of the Turkic languages and linguistic contacts of the early Turks by **A.V. Dybo** (766–817). In the final Appendix there is the annotated 110–word-list of all Turkic languages by **A.V. Dybo** (822–859). Bibliography contains *c*. 800 titles (860–898).

1.1.6. Syntheses of grammatical descriptions of the Turkic languages

In the last 60 years there have been published at least five various compendia, summarizing the grammatical sketches of all or most of the Turkic languages. The best Turkologists of their time participated in their authorship. Let us introduce them:

Philologiae Turcicae Fundamenta, Tomus I, edited by **Jean Deny** et alii (Wiesbaden: Steiner 1959) contains detailed descriptions of 34 Turkic languages of past and

present, plus some two analytic chapters, namely Classification of the Turkic languages by **J. Benzing** (1–4) & **K.H. Menges** (5–10) and Structure et tendences communes des languaes turques (Sprachbau) by **Louis Bazin** (11–20), besides the descriptive parts, written by **A. von Gabain**: Das Alttürkische (21–45); Die Sprache des Codex Cumanicus (46–73); **O. Pritsak**: Mamluk-Kiptschakisch (74–80) & Armenisch-Kiptschakisch (81–86); **M. Mansuroğlu**: Das Karakhanidische (87–107) & Anhang: Die Inschrift von Semireč'e und die der Öngüt-Türken (108–112); **J. Eckmann**: Das Chwarezmtürkische (113–137) & Das Tschagataische (138–160); **M. Mansuroğlu**: Das Altosmanische (161–181); **J. Deny**: L'Osmanli moderne et le Türk de Turquie (182–238); **A. Caferoğlu**: Die anatolischen und rumelischen Dialekte (239–259); **G. Doerfer**: Das Gagausische (260–271) & Das Krimosmanische (272–279); **A. Caferoğlu & G. Doerfer** (280–307); **L. Bazin**: Le Turkmène (308–317); **O. Pritsak**: Das Karaimische (318–339) & Das Karatschaische und Balkarische (340–368); **J. Benzing**: Das Kumükische (391–406); **K. Thomsen**: Kasantatarische und westsibirischen Dialekte (407–420); **J. Benzing**: Das Baschkirische (421–433); **K.H. Menges**: Die aralo-kaspische Gruppe (Kasakisch, Karakalpakisch, Nogaisch, Kiptschak-Özbekisch, Kirgisisch) (434–488); **S. Wurm**: Das Özbekische (489–524); **O. Pritsak**: Das Neuuigurische (525–563); **K. Thomsen**: Die Sprache der Gelben Uiguren und das Salarischen (564–567); **O. Pritsak**: Das Altaitürkische (568–597) & Das Abakan – und Čulymtürkische und das Schorische (598–639); **K.H. Menges**: Das Sojonische und Karagassische (640–670); **N. Poppe**: Das Jakutische (einschliesslich Dolganisch) (671–684); **J. Benzing**: Das Hunnische, Donaubulgarische und Wolgabolgarische (685–694) & Das Tschuwasische (695–752).

Turkologie, edited by **Annemarie von Gabain** (Leiden: Brill 1963; quoted according to the expanded reedition 1982), consists of the following chapters: **A. von Gabain**: Charakteristik der Türksprachen (3–26); **O. Pritsak**: Das Alttürkisch (27–52); **J. Benzing**: Das Tschuwasische (61–71); **K.H. Menges**: Die sibirischen Türksprachen (72–138); **A. Temir**: Die nordwestliche Gruppe der Türksprachen (161–174); **A. von Gabain**: Die Südwest-Dialekte des Türkischen (174–205).

Tjurkskie jazyki, edited by **N.A. Baskakov** in the series 'Languages of nations of USSR' (Vol II, Moskva: Nauka 1966), describes 23 modern Turkic languages spoken in the territory of USSR. Namely, Čuvaš by **I.A. Andreev** (43–65); Azerbaijani by **N.Z. Gadžieva** (66–90); Turkmen by **P.A. Azimov, Dž. Amansaryev, K. Saryev** (91–111); Tatar by **M.Z. Zakiev** (139–154); Baraba Tatar by **L.V. Dmitrieva** (155–172); Baškir by **A.A. Juldašev** (173–193); Kumyk by **A.G. Magomedov**; Karačai-Balkar by **M.A. Xabičev**; Crimea-Tatar by **Ė.V. Sevortjan**; Karaim by **K.M. Musaev**; Nogai by **N.A. Baskakov** (280–300); Karakalpak by **N.A. Baskakov** (301–319); Kazakh by **S.K. Kenesbaev & N.B. Karaševa** (320–339); Uzbek by **V.V. Rešetova** (340–362); (New) Uyghur by **A.T. Kajdarov** (363–386); Tuva by **Š.Č. Sat** (387–402); Yakut by **E.I. Ubrjatova** (403–427); Khakas by **V.G. Karpov** (428–445); Čulym-Turkic by **A.P.**

Duľzon (446–466); Šor by **G.F. Babuškin & G.I. Donidze** (467–481); Kirgiz by **B.M. Junusaliev** (482–505); Altai by **N.A. Baskakov** (506–522).

Tjurkskie jazyki, edited by **Ė.R. Tenišev** in the series 'Languages of the World' (Moskva: Indrik / Institut jazykoznanija Russkoj Akademii nauk 1997), consists of two synthetic chapters devoted to Altaic languages by **Ė.R. Tenišev** (7–16) and Turkic languages by **N.Z. Gadžieva** (17–34), 15 descriptions of old epigraphic or literary languages, plus extinct tribal languages, and 39 descriptions of the modern languages, including some dialects, namely **Ė.R. Tenišev**: Old Turkic literary language (35–46); **S. Xakimzjanov**: Bulgar (47–51); **Ė.R. Tenišev**: Hunnish (52–53); **L.Ju. Turguševa**: Old Uyghur (54–63); **G.A. Abduraxmanov**: Karakhanid Uyghur (64–74); **Ė.N. Nadžip & G.F. Blagova**: Mameluke Kipčak (75–80); **Ė.A. Grunina**: Oghuz of the X-XIth century (81–88); **I.V. Kormušin**: The language of the Orkhon-Yenisei inscriptions (89–106); **A.M. Ščerbak**: Pečeneg (107–109); **A.A. Čečenov**: Polovets (110–115); **V.G. Guzev**: Old Anatolian Turkic (116–125); **Ė.N. Nadžip & G.F. Blagova**: Turki (126–137); **N.Z. Gadžieva**: Khazar (138–139); **Ė.I. Fazylov**: Khwarezmian Turkic (139–147); **G.F. Blagova**: Čaghatai (148–159), besides the modern languages and dialects, namely **M.Š. Širaliev**: Azerbaijani (160–171); **L.Š. Arslanov**: Alabugat Tatar (Nogai) (172–178); **N.A. Baskakov**: Altai (179–187); **L.Š. Arslanov**: Astrakhan Karagaš Nogai (187–193); **L.A. Pokrovskaja**: Turkic languages of the Balkans (194–198); **L.V. Dmitrieva**: Baraba Tatar (199–205); **A.A. Juldašev**: Baškir (206–2015); **E.A. Poceluevskij**: Bojnurdi (216–223); **L.A. Pokrovskaja**: Gagauz (224–234); **S.I. Androsova**: Dolgan (235–241); **A.T. Kajdarov**: Kazakh (242–253); **K.M. Musaev**: Karaim (254–263); **N.A. Baskakov**: Karakalpak (264–271); **A.A. Čečenov & I.X. Axmatov**: Karačai-Balkar (272–285); **B.O. Oruzbaeva**: Kirgiz (286–297); **S.R. Izidonova**: Crimean Tatar (298–308); **D.I. Rebi, B.M. Ačkinazi, I.V. Ačkinazi**: Krymčak (309–318); **L.S. Levitskaja**: Kumyk (319–327); **N.A. Baskakov**: Nogai (328–334); **Ė.R. Tenišev**: Salar (335–344); **Ė.R. Tenišev**: Saryg Yughur (345–353); **E.A. Poceluevskij**: Sonkori Turkic (354–357); **M.Z. Zakiev**: Tatar (357–371); **V.I. Rassadin**: Tofalar (372–383); **Š.Č. Sat**: Tuva (384–393); **A.N. Kononov**: Turkish (394–411); **B.Č. Čaryjarov & O.N. Nazarov**: Turkmen (412–425); **A.P. Xodžiev**: Uzbek (426–436); **G.S. Sadvakasov**: Uyghur (437–449); **S.N. Muratov**: Urum (450–454); **Ė.R. Tenišev**: Fu-Yü Kirgiz (455–458); **G.I. Donidze**: Khakas (459–469); **A.M. Ščerbak**: Khalaj (470–475); **E.A. Poceluevskij**: Khorasani Turkic (476–479); **I.A. Andreev**: Čuvaš (480–490); **R.M. Birjukovič**: Čulym Turkic (491–496); **G.I. Donidze**: Šor (497–505); **L.Š. Arslanov**: Yurt Tatar (Astrakhan Nogai) (506–512); **N.K. Antonov**: Yakut (513–524).

The Turkic Languages, edited by **Lars Johanson & Éva Ágnes Csató** (London & New York: Routledge 1998) is opened by six synthetic chapters by **H. Boeschoeten**: The Speakers of Turkic Languages (1–15); **P.B. Golden**: The Turkic Peoples: A Historical Sketch (16–29); **A.Róna-Tas**: The Reconstruction of Proto-Turkic and the Ge-

netic Question (67–81); **Lars Johanson**: The History of Turkic (81–126); **A. Róna-Tas**: Turkic Writing Systems (126–137); followed by synchronic descriptions of individual languages or their groups, namely by **M. Erdal**: Old Turkic (138–157); **Á. Berta**: Middle Kipčak (158–165); **H. Boeschoeten & Marc Vandamme** (166–**178); C. Kerslake**: Ottoman Turkish (179–202); **É.Á. Csató & L. Johanson**: Turkish (203–235); B. Brendemoen: Turkish Dialects (236–241) & The Turkish Language Reform (242–247); **C. Schönig**: Azerbaijanian (248–260) & Turkmen (261–273); **G. Doerfer**: Turkic Languages of Iran (273–282); **Á. Berta**: Tatar and Baškir (283–300) & West Kipčak Languages (301–317); **M. Kirchner**: Kazakh and Karakalpak (318–332); **É.Á. Csató & B. Karakoç**: Nogai (333–342); **M. Kirchner**: Kirgiz (344–356); **H. Boeschoeten**: Uzbek (357–378); **R.F. Hahn**: Uyghur (379–396) & Yellow Uyghur and Salar (397–402); **C. Schönig**: South Siberian Turkic (403–416); **M. Stachowski & A. Menz**: Yakut (417–433); **L. Clark**: Čuvaš (434–452).

There were published yet two other useful synthetic monographs presenting original points of view of their authors, *The Turkic Languages and Peoples* by **Karl H. Menges** (1968; revised 1995), and *An Introduction to Turkology* by **András Róna-Tas** (1991).

1.2. History of descriptive and comparative research of the Mongolic languages

1.2.0. Bibliographic survey of Mongolic linguistics

There are several useful publications summarizing bibliographic information about the Mongolic languages, namely e.g. **Benzing** 1953, 39–60; **Poppe** 1965, 79–94; **Sanžeev** 1981, 235–258, 344–345; **Krueger & Taube** 2006, 9–112; **Rachewiltz & Rybatzki** 2010, 136–255.

1.2.1. Beginning of description of the Mongolic languages

The first relevant information about the world of Mongols and the Far East in general were mediated to Europe by several monks and merchants in the 13th cent.

Two Franciscan monks, **Giovanni da Pian del Carpini** and **Benedykt Polak**, visited Qaraqorum in 1246 as envoys of pope Innocent IV to the court of Great Qan Güyük, son of Ögedei. Both envoys described their experiences in several books, namely Carpini: *Historia Mongolorum*; Benedykt Polak: *De Itinere Fratrum Minorum ad Tartaros* "On the travel of Franciscan friars to the Tatars" and *Historia Tartarorum.*

The second journey was initiated by King Louis IX of France during the Sixth Crusade who hoped for an alliance with the Mongols against the 'Saracens'. In 1249 he sent Dominican friar Andrew of Longjumeau to the court of the Great Qan. Still in the same year, before Longjumeau's return, Louis organized the second mission, represented again by two Franciscan monks **William of Rubruck** (**Willem van Ruysbroeck**), of Flemish origin, and Bartholomew of Cremona. They reached Qaraqorum only in 1253, when the Great Qan Möngke reigned. After his return in 1255, Rubruck wrote *Itinerarium fratris Willielmi de Rubruquis de ordine fratrum Minorum, Galli, Anno gratiae 1253 ad partes Orientales*.

The brothers Niccolò and Maffeo Polo, merchants from Venice, travelled to the Mongols for the first time in 1260–1269. They met the Great Qan Qubilai in Cambaluc (Qan-Baliq, today Beijing), who wrote a letter to the Pope with a request for scholars knowing western sciences.

Marco Polo accompanied his father Niccolò and uncle Maffeo in their second journey to the Mongols in 1271. They returned only in 1295. The description of this 24–year travel and sojourn in the Far East was dictated by Marco to Rustichello da Pisa, while they were imprisoned in Genoa in 1298–1299. Rustichello wrote the book *Livres des merveilles du monde* "Book of the world's marvels", which became a real bestseller already in the 14th cent. and remained among the most beloved books till the 20th cent. (For a critical analysis of the geographic, historic and linguistic data, cf. Marco Polo: *The description of the world*, translated and annotated by Arthur C. Moule & Paul Pelliot. London: Routledge 1938).

Just during the Yuan dynasty (1271–1368), founded by the Great Qan Qubilai, appear the first works mapping the Middle Mongol language:

Chinese-Mongol vocabularies, e.g. *Zhiyuan Yiyu* (1264–1294) and the *Hua-Yi Yiyu* (1389) – see Ligeti 1990 & Kara 1990 and Lewicki 1949–1959 respectively.

Arabic-Mongol vocabularies, e.g. *Kitāb-i Majmū' Tarjumān-ī Turkī va 'Ajamī va Muġalī va Fārsī*, known as the 'Leiden manuscript' (1345) – see Poppe 1927–28; *Ḥilyat al-Insān va Ḥalbat al-Lisān* of Jamāl-ad-Dīn Ibn Muhannā (first half of the 14th century); *Muqaddimat al-Adab* of Abū'l-Qāsim Maḥmūd bin 'Umar al-Zamaḫšarī (probably 15th century) – see Poppe 1938; *Šamil ūl-lugha* of Ḥasan bin Ḥusain 'Imād al-Qarāḥiṣār (early 15th century), known as the 'Istanbul Vocabulary' – see Ligeti 1962; 'Rasūlid Hexaglott' (compiled for the sixth Rasūlid king of Yemen, al-Malek al-Afḍal al-ʿAbbās who reigned 1363–1377), consisting of *c*. 1,800 entries in Arabic, Persian, Turkic (Kipčak-Oghuz), Middle Greek, Cilician Armenian, and Middle Mongol – see Golden 2000.

Probably the first Mongol grammar appearing in Europe was written in 1663–1672? by the French traveller, diplomat, orientalist and royal librarian to King Louis XIV of France, **Melchisédech Thévenot** (*c*. 1620–1692). It is known under the title

Grammaire de la langue des Tartares Monguls ou Mongols, traduite d'un manuscrit arabe. Grammaire de la langue des Mogols, Essais de la grammaire mongole. See Aalto 1963; cf. also Pelliot 1922, 372.

Witsen (1705) collected two longer wordlists from two spoken Mongolic languages, Dagur – around 475 items (pp. 68–73) and Kalmyk – almost 400 words including numerals (pp. 297–304). But Hajnal (1994) demonstrated that most of the words ascribed to Dagur are more or less identical with the Kalmyk words.

From his comments it is apparent that he was able to recognize relationship of four spoken Mongolic languages, (Khalkha-)Mongol, Kalmyk, Buryat and Dagur:

P. 68: Volgt een naem en woorden Lijst der Spraeke, welke gebruiklijk is, in het *Daursche* Landschap, omtrent de Rivier *Amur*, en in de steden en plaetzen, onderhoorig aen *Sina*, na by de groote Muur, die *Sina* van *Tartarye* scheid, hellende na het Sineesch, dat men in *Leautung* spreekt, en mede na de Taele, die den *Mugalen* eigen is.

"Following is the list of names and words of {nations} of Daguria around the Amur, in cities and places subordinated to China, around the Great Wall, among China and Tartaria; it is similar to the Chinese language of Liaodong and to the language of (Khalkha-)Mongols."

P. 213: De Mugaelsche en Bratsche Tael verscheelt als Hoog en Nederduitsch.

"(Khalkha-)Mongol and Buryat languages differentiate as High German and Low German languages."

P. 803: *Brati,* de Spraek komt wat over een met de *Kalmakken*, woonen rondsom het Meir *Baikala* ....

"Buryats – their language is rather identical with the Kalmyk language. They live around the Baikal Lake."

Very soon the Kalmyk glossary of Witsen was surpassed by **Strahlenberg** (1730, 137–156; 1738, 142–163), who summarized 1431 Kalmyk lexemes with translations (cf. Krueger 1975).

In his *Vocabularium Sibiricum* (1747) **Fischer** used the lexical data of 3 Mongolic languages spoken in Siberia, namely Kalmyk, (Khalkha-)Mongol, Buryat.

The same three languages appear in *Linguarum totius orbis vocabularia comparativa*, I-II, b**y Pallas** (1787–89), bringing the lexical material consisting of 273 lexemes, plus numerals.

In his very popular book *Asia Polyglotta* **Julius Klaproth** (1823, 276–284) collected *c*. 250 words, plus numerals, from 5 Mongolic languages and dialects, namely Kalmyk from Volga, Kalmyk from Dzungaria, Buryat, Khalkha and probably Dagur (a Mongolic language from the Great Chinese Wall). All early lexical data of Kalmyk were collected and analyzed by Doerfer (1965).

1.2.2. Standard Mongolic grammars and dictionaries

During the 19th century appeared first standard grammars (**Schmidt** 1831; **Bobrovnikov** 1835) and relatively big dictionaries (**Schmidt** 1835; **Kowalewski** 1844–49; **Golstunskij** 1893–95) of Written (Preclassic, Classic or Literary) Mongol. In the 20th cent. they are followed by **Poppe** (1937; 1954), **Chinggaltai** (1963), **Weiers** (1969), **Sárközi** (2004), and in the field of lexicology especially by **Lessing** (1960). Among the living literary languages, Kalmyk, the westernmost Mongolic language, was described first – dictionaries by **Zwick** (1853); **Smirnov** (1857), **Golstunskij** (1860), and grammar of **Bobrovnikov** (1849). The high level of the Kalmyk linguistic research continues in the 20th cent. too. Crucial is **Ramstedt**'s *Kalmückisches Wörterbuch* (1935), which served as a comparative or even etymological dictionary of the Mongolic languages for a long time. But it is necessary to stress that Ramstedt included in his dictionary, besides actually attested Written Mongol comparanda, also hypothetical, reconstructed forms without any support in sources. This was carefully verified by **Krueger** (1961). After Ramstedt's dictionary several lexicons on a bigger scale were published: **Basanganov & Sangaev** (1940; 2nd ed. 1963), **Bormanshinov & Zagadinov** (1963); **Iliškin** (1964); **Muniev** (1977); **Xaŕkov & Ubušieva** (1986). New Kalmyk grammars were written by **Bormanshinov** (1963) and **Sanžeev** (1983). The Khalkha dictionaries appeared with a delay: **Bimbaev** 1913, 1916. The lexicons from recent times belong among the most detailed, e.g. **Tömörtogo** 1978; **Vietze** 1981, 1988/1998; **Damdinsürėn** 1993; 1998; **Bawden** 1997; **Kručkin** 2000, 2003; **Luvsandėndėv** 2001–2002; **Ganhuyag** 2002 etc. Two grammars of Khalkha were written by **Poppe** (1951a, 1970). The grammar of **Todaeva** (1951) follow **Vladimircov** (1929) in comparison with Written Mongol. Later grammars are from **Street** (1963), **Sanzheyev** {Sanžeev} (1973). The Buryat lexicon was compiled by **Čeremisov** (1951, 1973). The first grammatical description was written by **Castrén** (1857b). More than one century later **Poppe** (1960/1997), **Sanžeev** et alii (1962), **Todaeva** (1968) and **Skribnik** (2003) are followers. Recently 'rediscovered' Khamnigan Mongol was best described by **Janhunen** (1990, 1992a, 2003a, 2005) and **Yu Wonsoo** (2011). The biggest dictionary of Ordos was published by **Mostaert** (1941–1944). **Krueger** (1978–1984) prepared *Materials for an Oirat-Mongolian to English Citation Dictionary*. The most detailed description of Monguor was published by **Mostaert & Smedt** (1929+1930, 1933, 1945/1964). More recent are those of **Todaeva** (1973), **Nugteren** (1997, 2011), **Georg** (2003a), **Slater** (2003a, b), **Faehndrich** (2007). For long time for Dagur there was no big dictionary, only glossaries, usually accompanying the grammatical descriptions, e.g. **Poppe** (1930, 1934); **Martin** (1961); **Kałużyński** (1969+1970); **Todaeva** (1986). Special vocabularies of Dagur appear only recently: **Engkebatu** (1984); **Tumurdėj & Cybenov** (2014). There are good descriptions of Dongxiang = Santa by **Todaeva** (1959, 1961), **Fields** (1997) and **Kim** (2003).

Kangjia was described by **Siqin** (1999). **Nugteren** (2011) included Kangjia data in his rich dissertation. The most detailed description of Bonan (= Baoan) is from **Fried** (2010), who was preceded by **Todaeva** (1963, 1966) and **Wu Hugjiltu** (2003). For Šira Yughur (= East Yughur) there are only relatively brief descriptions by **Tenišev & Todaeva** (1966) and **Nugteren** (2003). The best modern descriptions of Moghol were published by **Weiers** (1972, 2003). Older data were summarized and analyzed by **Ramstedt** (1906) and **Ligeti** (1955). **Poucha** (1961) discussed the sociolinguitic aspects of Moghol as *Mischsprache*.

1.2.3. Mongolic comparative and etymological dictionaries

Possibilities of an etymological dictionary of the Mongolic languages were discussed by **Posch** (1956) and **Kara** (1965). But later were published comparative lexicons, some limited to only one dialect area, e.g. **Todaeva** (1981: the dialects of Inner Mongolia, namely Arukhorčin, Awga, Awganar, Barin, Čakhar, Džalait, Khešikten, Khorčin, Khučit, Naiman, Sunit, Udžumčin); **Kuribayashi** (1989: Čakhar, Dagur, Šira-Yögur, Monguor, Baoan, Dongxiang); **Yamakoshi** (2003: Khamnigan, Šinekhen-Buryat, Bargu-Buryat, plus Khalkha and Written Mongol); others covering the modern Mongolic languages of China[11] as *Měnggǔ yǔzú yǔyán cídiǎn* ['Dictionary of the Language(s) of the Mongolian Nationality'], ed. by **Sūn Zhú** (1990), or **Nugteren** (2011: Common Mongolic, Middle Mongol, Written Mongol, Khalkha, Ordos, Buryat, Bargu, Kalmyk, Dagur, East Yughur, Mongghul = Huzhu Monguor, Manghuer = Minhe Monguor, Baoan Dahejia = Jishishan, Baoan Ñantoq, Kangjia, Dongxiang, Moghol). This effort was crowned by the first three volumes of 'Etymological dictionary of the Mongolic languages' by **Sanžeev**, **Orlovskaja & Ševernina** (2015–2018[12]). **Rajki**'s *A concise etymological dictionary of Khalkha (Modern Mongolian)* (2006–2009) represents only a very laconic comparative wordlist consisting of 2000 items.

1.2.4. Mongolic comparative grammars and grammatical syntheses

The first attempt at a comparative grammar of the Mongolic languages may be ascribed to **Whymant** (1926), who compared Khalkha with Buryat, Kalmyk and Ordos. **Vladi-**

11 The comparative lexicon summarizes lexical data of 11 languages/dialects of Inner Mongolia & Xinjiang: Alxa / Alašan (Alashan 阿拉善), Baarin (Balinyouqi 巴林右旗), Barga (Chen Ba'erhu 陈巴尔虎), Buryat (Buliyate 布利亚特), Darhan (Da'erhan 大尔罕), Dulan (都兰), East Sunit (Dong Sunite 东苏尼特), Hejing (和静), Kharčin (Kalaqin 喀喇沁), Otoγ (Etuoke 鄂托克), Zhenglanqi (正蓝旗), plus 6 other languages: Dagur, Šira Yughur, Tuzu/Monguor, Dongxiang/Santa, Baoan/Bonan, Khalkha.

12 The dictionary was compiled by Sanžeev (1902–1982) and Ševernina (1928–2002) already in 1973 and only in the second decade of the 21st century prepared for publication by Orlovskaja.

mircov's comparative phonetics based on Written Mongol and Khalkha from 1929 with several reeditions became a classical work, used with profit till the present time. Sanžeev (1953–1963) follows this tradition. Probably most beloved is *Introduction to Mongolian Comparative Studies* of **Nicholas Poppe** (1955; reed. 1987), bringing both historical phonetics and comparative morphology. In his comparison Poppe included Written Mongol, Middle Mongol, Buryat, Dagur, Kalmyk, Khalkha, Moghol, Monguor, Oirat, Ordos, and occasionally Širongol and Šira Yughur. Very valuable are two compendia. First was *Mongolistik* (*Handbuch der Orientalistik* 5: *Altaistik* 2. Leiden – Köln: Brill 1964), consisting of the following chapters devoted to the Mongolic languages: Klassifikation und Verbreitung (**Doerfer**; 35–50); Sprachbau (**Doerfer**; 51–75); Erforschungsgeschichte (**Aalto**; 76–80); Die mongolische Schriftsprache (**Doerfer**; 81–95); Das mittelmongolische (**Poppe**; 96–103); Quadrat-Inschriften (**Aalto**; 104–107); Die burjätische Sprache (**Poppe**; 108–114); Khalkha (**Posch**; 115–133); Das Ordossische (**Poppe**; 134–136); Die dagurische Sprache (**Poppe**; 137–142); Monguor (**Schröder**; 143–158); Das Mogholische (**Pritsak**; 159–184); Schrift-Oiratisch (**Aalto**; 185–199); Das Kalmükische (**Posch**; 200–226). The second one is *The Mongolic languages*, edited by **Juha Janhunen** (2003c = *ML*). It contains grammatical sketches of all modern Mongolic languages, namely Bonan (**Wu Hugjiltu**; 325–345), Buryat (**Skribnik**; 102–128), Dagur (**Tsumagari**; 129–153), Kalmyk (**Bläsing**; 229–247), Khalkha (**Svantesson**; 154–176), plus close dialects (**Janhunen**; 177–192), Khamnigan (**Janhunen**; 83–101), Mangghuer (**Slater**; 307–324), Moghol (**Weiers**; 248–264), Mongghul (**Georg**; 286–306), Oirat (**Birtalen**; 210–228), Ordos (**Georg**; 193–209), Santa (**Kim**; 346–363), Šira Yughur (**Nugteren**; 265–285), plus Written Mongol (**Janhunen**; 30–56), Middle Mongol (**Rybatzki**; 57–82), and reconstructed Proto-Mongolic (**Janhunen**; 1–29). One chapter is devoted to "Para-Mongolic" (*ML* 391–402), where **Juha Janhunen** summarized state-of-the-art of research in the field of Kitan and other relic Mongolic-like ancient languages to 2000. Especially the research into Kitan is becoming the most progressively developing discipline. Among new studies the monograph of **Kane** (2009) and a series of brilliant articles should be mentioned, e.g. **Chinggeltei** 2002; **Shimunek** 2011 (review of Kane 2009), 2014, 2018; **Janhunen** 2012b; **Róna Tas** 2016, 2017.

1.3. History of descriptive and comparative research of the Tungusic languages

1.3.0. Bibliographic survey of the Tungusic linguistics

There are several useful bibliographic studies summarizing information about the Tungusic languages, namely e.g. **Benzing** 1953, 15–38; **Poppe** 1965, 95–100; **Kormušin**

1982, 153–167, 321–323; **Clark & Walravens** 2006, 113–172; **Rachewiltz & Rybatzki** 2010, 255–347, plus the website 'The Tungusic Research Group at Dartmouth College' <http://www.dartmouth.edu/~trg/biblio.html>.

1.3.1. Beginning of description of the Tungusic languages

The first Tungusic language with an epigraphic tradition is Jurchen, with earliest inscriptions dated to the 12th century. During the Ming dynasty, probably in the 16th century, in the Bureau of Translators and Bureau of Interpreters, devoted to written and spoken languages of China respectively, two dictionaries recording Late Jurchen were compiled (Kane 1989, 90–101, 129). The first surviving dictionary of Manchu with grammatical remarks, called *Dajcin gurun ji iooṅi bitxe*, was compiled by the Chinese **Hun-Jao** in 1682 (cf. Zaxarov 1875, xv). Very soon it was followed by another Manchu dictionary called *Manju nikan šu adali iooṅi bitxe* (1690). The first European grammatical description of the Manchu language was completed by **Ferdinand Verbiest** in 1668 and published in the period 1681–1692 by Melchisédech Thévenot under the title *Elementa Linguæ Tartaricæ*. The grammar remained without the name of its author and was commonly ascribed to the French Jesuit **Gerbillon** (cf. **Pelliot** 1922, 367–86; **Poppe** 1965, 95). The first European dictionary of the Manchu language was translated from its Manchu-Chinese original by **Amyot** and published by Langlès in 1789. In the 19th century these were superseded by the grammars of **von Gabelentz** (1832) and grammar and dictionary of **Zaxarov** (1879, 1875). The first information to European scholars about the non-literary Tungusic languages was mediated by **Witsen** (1692, 654). He had recorded the text of the *Paternoster* in one of the Evenki dialects. He also introduced the term Tungusic. In 1730 Strahlenberg recognized the whole group of the Tungusic languages (cited after the English edition from 1738, 52). In an Appendix called *Harmonia Linguarum* he compared *c*. 25 lexemes in two Evenki and one Even (Lamut) dialects. In his *Vocabularium Sibiricum* (1747) **Fischer** used the lexical data of two Evenki dialects, south and east, and Manchu. The relationship of Manchu to Evenki and Even was recognized by **Pallas** (1787, xiv): *Tungusicae dialecti, quorsum Tschapogiri ad Jeniseam sic dicti et Lamuti marii Ochotensis accolae pertinent, in multis verbis evidentissime cum Mandshurica lingua congruunt.* There **Pallas** (1787–89) collected the lexical material consisting of 273 lexemes, plus numerals, of 10 Tungusic languages or dialects here, namely Tungus of Daguria, Tungus of Eniseisk, Tungus of Mangazeia, Tungus of Braguzin, Tungus of Upper Angara, Tungus of Yakutsk, Tungus of Okhotsk, Lamut, Čapogir, plus separately Manchu.

1.3.2. Standard descriptions of the Tungusic languages.

The first standard description of Evenki was written by **Castrén** (1856). In his *Vorwort* the editor **Schiefner** presented the regular phonetic correspondences between Evenki and Manchu. In 1896 **Grube** transcribed and translated the Jurchen-Chinese glossary, illustrating the close relation between Jurchen and Manchu, mentioned already by **Klaproth** (1823, 292–93) on the basis of *c*. 40 lexical parallels. The modern transcriptions of Mudrak (1985, 1988) and Kane (1989) demonstrate that Jurchen was an older stage of Manchu. During the 20th century all non-literary Tungusic languages were satisfactorily described.

1.3.3. Tungusic comparative grammars and dictionaries.

The comparative effort was crowned by publications of "Tungusic comparative phonetics" (**Cincius** 1949), "Tungusic comparative grammmar" (**Benzing** 1955a), and "Comparative dictionary of the Tungusic languages" (Cincius 1975–77), besides "Basic vocabulary of Tungusic languages" consisting of 200 lexemes by **Kazama** (2003b). Valuable may also be the synthetic studies of **Benzing** (1953b), **Lopatin** (1958), **Sunik** (1959, 1968), **Menges** (1968a, 1968b, 1978a) and **Miller** (1994). New syntheses appeared in the latest two decades: **Janhunen** (2005), **Malchukov & Whaley** (2012), **Schwarz & Blažek** (2012).

1.4. History of descriptive and comparative research of the Korean language

1.4.1. First descriptions of Korean lexicon and grammar

The first lexicological work devoted to Korean, more exactly Early Middle Korean, was compiled by the Chinese envoy of the Northern Song Dynasty, **Sun Mu**, in the Goryeo (Koryŏ) capital in 1103. It is known under the title "A miscellaneous collection of things in Korea" (雞林類事 *Jīlín lèishì*), or in Korean *Kyeylim 'yusa* (*Kyerim yusa*). It contains *c*. 350 words of the contemporary language of the capital (see the edition by Sasse 1976).

The first Later Middle Korean lexicographic work was 'A Glossary from the Chosŏn Interpreters Institute' (朝鮮館譯語 *Cháoxiān-guǎn yìyǔ*) from *c*. 1400, i.e. still before the introduction of the *Hangeul* script, containing c. 590 Korean words, transcribed with Chinese characters as phonograms (Lee Ki-Moon & Ramsey 2011, 101). Only in 1446 the new script *Hangeul* was introduced in the document called 'The Correct Sounds for the Instruction of the People' (訓民正音 *Hunmin chŏngŭm*). In its

second part 'Explanations and Examples of the Correct Sounds for the Instruction of the People' (訓民正音解例 *Hunmin chŏngŭm haerye*) there are concentrated valuable linguistic information, especially about phonology of Late Middle Korean, illustrated with numerous examples (Lee Ki-Moon & Ramsey 2011, 102). In 1527 **Choe Sejin** (최세진; 1465–1543) published his Sino-Korean glossary, known as 'Collection of Characters for Training the Unenlightened' (訓蒙字會 *xùnméng zìhuì* / 훈몽자회 *Hunmong jahoe*). Here he compiled both Sino-Korean and native Korean readings and interpretations for 3,360 Chinese characters (see Lee Ki-Moon & Ramsey 2011, 113).

In his description of 'Tartaria' **Witsen** (1705, 52–53) quoted 74 Korean appellatives, plus month names and numerals. In his book *Asia Polyglotta* **Klaproth** (1823, 335–342) recorded *c*. 470 Korean words. In the following century only a couple of descriptive studies of the Korean language were published: grammars – **Ross** 1882; **Kuz'min** 1904; **Gale** 1916; dictionaries – **Pucillo** 1874 (reprint 2014); ***OKRKS*** 1904; **Gale** 1897; **Underwood** 1925.

1.4.2. Korean-Japanese comparisons

The first thoughts about a common origin of Korean and Japanese were formulated by Japanese scholars already in the 18th cent, namely by **Arai Kakuseki**, a Tokugawa Confucian in 1717, and **Fujii Teikan**, the first pioneer of archeology in Japan in 1781 (cf. Miller 1967a, 61–62; Lewin 1976, 390; Sohn 1980, 41). They were followed by the Spanish scholar **Lorenzo Hervás y Panduro** (1801), who admitted Korean as the only possible relative of Japanese (p. 64): *He hellado que la lengua japona es totalmente diverse de los idiomas de todas las nacionas asiáticas (exceptuando probablemente alguna de la Córea china), que están las mas inmediatas al Japon. ...* (p. 65): *Conjeturo pues que tiene afinidad la lengua japona con alguno de los lenguages que se hablan en Córea, reyno feudatario del imperio chino, y por esto, como tambien por la gran inmediacion de Córea al Japon, paso desde este á ella; y entro asi en tierra-firme, ó en el gran continente del Asia*.

A real Japanese-Korean comparison, operating with both grammar and lexicon, may be ascribed only to Aston (1879). He was followed by **Shiratori** (1897) and **Kanazawa** (1910). This approach continued in the last half century in studies e.g. of **Martin** 1966; **Whitman** 1985, 2012; **Starostin** 1990; **Unger** 2009; **Vovin** 2010; **Francis-Ratte** 2016.

1.4.3. Korean within Altaic

Parallelly, Korean was connected with other languages of the Altaic circle, beginning with **Siebold** (1832), who added to the Japanese comparanda also their Manchu counterparts. **Shiratori** (1914–1916) compiled a 595–entry vocabulary comparing Korean and the Altaic (plus Uralic) languages and claiming their genetic relationship. From the

point of phonetic laws **Evgenij D. Polivanov** (1927/1968) discussed 15 lexical parallels between Korean and other Altaic languages, including two Korean-Japanese comparisons. **Gustaf J. Ramstedt** began his interest in Korean with grammatical studies (1928, 1933), crowned by his *Korean Grammar* (1939, reed. 1997; in Russian 1951). No less important were his etymological studies (1949, 1953, 1954, 1982), published posthumously with exception of the first one.

Very important are studies concentrated on history of the Korean language, e.g. **Lee Ki-Moon** (1977), inspiring **Menges** (1984), and radically reworked by **Lee Ki-Moon & Ramsey** (2011), or on some aspects of the Korean historical phonology or morphology, e.g. **Martin** (1992, 1996), **Vovin** (1993b, 1995, 2000, 2001a, 2004, 2017b).

1.5. History of descriptive and comparative research of the Japonic languages

1.5.1. First Japanese lexicons

The early Japanese lexicography[13] was described by **Don C. Bailey** (1960). Let us mention several most important titles:

Shinsen jikyō (新撰字鏡, "Newly Compiled Mirror of Characters") by the Buddhist monk **Shōjū** (昌住), who completed his lexicon during the Shōtai era (898–901 CE) of the Heian period. It is the first Japanese dictionary applying native 'Japanese readings' of Chinese characters, called *kun'yomi*. It consist of 21,300 lemmas.

Wamyō ruijushō (倭名類聚抄, "Japanese names {for things}, classified and annotated"), compiled by **Minamoto no Shitagō** (源順; 911–983) in 934–938, i.e. in the Heian period. The entries contain the Chinese character, sources, Chinese pronunciations, definitions, and Japanese readings.

Ruiju myōgishō (類聚名義抄, "Classified dictionary of pronunciations and meanings, annotated"), from the late 11th or 12th cent., i.e. the Heian Period. The dictionary consists of more than 32,000 characters and compounds, brings both Sino-Japanese loans (*on'yomi*) and native Japanese readings (*kun'yomi*) for *kanji*, applying the Chinese spelling method called *fanqie*, in which pronunciation of one monosyllabic character is indicated by two different characters, first with the same anlaut, second with the same auslaut as the substituted character. The method was developed in the 3rd cent. in China. Here the Chinese dictionary *Qieyun* (601 CE) was followed. Other ways of transcription used for Japanese in *Ruiju myōgishō* are *man'yōgana*, adapted probably from Korea

13 Cf. also <https://en.wikipedia.org/wiki/List_of_Japanese_dictionaries>.

(Baekje) in the 5th cent. CE, and *katakana*, simplified in the 9th cent. from *man'yōgana* (cf. Bentley 2001; Seeley 2000, 19–23).

Iroha Jiruishō (色葉字類抄 or 伊呂波字類抄, "Characters classified in *iroha* order and annotated") is a dictionary of Chinese characters (*Kanji*) from the 12th cent., where every character lemma is annotated with *katakana*, to determine both Sino-Japanese loans (*on'yomi*) and Japanese native pronunciations (*kun'yomi*).

1.5.2. Early European and American lexicons and grammars of Japanese

The first European descriptions of the Japanese language were written by the Portuguese **João Rodrigues**, sailor, warrior, priest, missionary, Jesuit interpreter, and scholar. The Japanese-Portuguese dictionary (1603–1604), which has been ascribed to him, contained of 32,293 fully romanized entries, arranged in alphabetic order. Already in 1630 it was translated into Spanish and printed in Manila, and more than 250 years later in French (Pagès 1868). Rodrigues' Japanese grammar was published in two versions, first in Nagasaki (1604–1608), second in Macao (1620). His follower, a Spanish Dominican friar **Diego Collado**, is also the author of both a grammar and dictionary of Japanese (1632a, b), written in Latin and published in Rome. Due to this fact it was important for European scholars. The third early Japanese grammar was written by a missionary **Melchor Oyanguren de Santa Inés** of Basque origin and published in Mexico (1738; cf. the English version by Spear 1975). **Pallas** (1787–89) presented 273 Japanese lexemes, plus numerals, taken from a manuscript vocabulary collected from Japanese sailors, who were shipwrecked on Siberian shores.

During the 19th century appeared several new grammars and dictionaries of Japanese in European languages, e.g. grammars of **Hoffmann** 1868, 1876a, 1876b; **Aston** 1872, 1877; dictionaries: **Hepburn** 1967/1877/1983 & 1872/1886/1887/1897/1907. Very important in its time was a vocabulary by **Chamberlain** (1889) of Old Japanese.

1.5.3. Description of Ryukyuan

Probably the first record of any Ryukyuan language/dialect, namely Old Okinawan, is a brief phrasebook and vocabulary written in Korean Hangeul script, found as an appendix to the Korean chronicle *Haedong chegukki* from 1501 (cf. Vovin 2020, Chapter 2). Serious European research on Ryukyuan began with **Klaproth** (1810[14]; 1823, pp. 330–333: *c*. 260 Japanese and Ryukyuan lexemes; 1824), followed by **Bettelheim** 1846 (ms.) and **Chamberlain** 1895 (cf. Osterkamp 2015). In the beginning of the 20th cent. **Nikolaj**

14 Klaproth referred to a glossary entitled '*ŷ-yù-yū-schĕ*', i.e. *Yiyu yinshi* („Pronunciations and Explanations of Barbarian Words"), which he found in a Chinese text dated to the end of the 16th century.

Nevskij studied the Miyako language. A manuscript of his excellent dictionary was published and so mediated only as a dissertation of **Aleksandra Jarosz** in Poznań (2015). **Hattori** (1948) brought a study of a broader scope. From 1970s **Sergej Starostin** occasionally operated with the Ryukyuan data. In the last two decades **Alexander Vovin** has used them systematically. And in the second decade of the 21st cent. there appear several important studies, namely **Pellard** 2009, 2020; **Shimoji** & **Pellard** 2010, and especially the collective monograph *Handbook of the Ryukyuan languages: History, structure, and use* (Boston: Gruyter 2015) of three editors, **Patrick Heinrich**, **Shinsho Miyara**, and **Michinori Shimoji**. The Ryukyuan data also play a substantive role in another collective monograph, *Handbook of Japanese historical linguistics*, now in preparation in Gruyter (scheduled for February 2020).

1.5.4. Historical phonology and internal reconstruction of Japanese

There are several studies in the field of historical phonology, internal reconstruction or even historical grammar of Japanese from recent times, e.g. **Martin** 1987; **Miyake** 2003; **Vovin** 2005–2009; **Frellesvig & Whitman** 2008; **Frellesvig** 2010.

1.5.5. Relic Japonic traces in the Korean Peninsula

Very important is the research in the field of relic languages from the Korean Peninsula, which seem to be closer to Japanese than to Korean – see e.g. **Miller** (1979[1981]; **Vovin** 2005a, 2007a, 2013b; **Beckwith** 2007; **Robbeets** 2007; **Blažek** 2010.

1.5.6. Japanese-Korean comparisons

Considerations about the external relations of Japanese appeared already in the 18th century. The first thoughts about a common origin of Korean and Japanese were formulated by Japanese scholars just in the 18th cent, namely by **Arai Kakuseki**, a Tokugawa Confucian in 1717 (cf. Lewin 1966), and **Fujii Teikan**, the first pioneer of archeology in Japan in 1781 (cf. Miller 1967a, 61–62; Lewin 1976, 390; Sohn 1980, 41). They were followed by the Spanish scholar **Lorenzo Hervás y Panduro** (1801), who admitted Korean as the only possible relative of Japanese (p. 64): *He hellado que la lengua japona es totalmente diverse de los idiomas de todas las nacionas asiáticas (exceptuando probablemente alguna de la Córea china), que están las mas inmediatas al Japon. ...* (p. 65): *Conjeturo pues que tiene afinidad la lengua japona con alguno de los lenguages que se hablan en Córea, reyno feudatario del imperio chino, y por esto, como tambien por la gran inmediacion de Córea al Japon, paso desde este á ella; y entro asi en tierra-firme, ó en el gran continente del Asia*.

A real Japanese-Korean comparison, operating with both grammar and lexicon, may be ascribed only to **Aston** (1879). His followers were **Shiratori** (1897) and **Kanazawa** (1910). The latter saw the linguistic relationship as follows: "the Korean language belongs to the same family of tongues as the language of Japan; it is in fact a branch of Japanese, like the native language of the Loochoo Isles" (p. 1). The tradition of binary Korean-Japanese comparisons in both, genetic and areal perspectives, continues in the following century, cf. **Martin** 1966; **Whitman** 1985, 2012; **Starostin** 1990; **Unger** 2009; **Vovin** 2005–2009, 2010; **Francis-Ratte** 2016.

1.5.7. Japanese within Altaic

The tradition of comparisons of Japanese with other Altaic languages began with **Siebold** (1832: tables after p. 275), who compared Japanese with Korean and Manchu (besides Ainu), and **Boller** (1857a, 1857b), who compared Japanese with Manchu, Written Mongol, and two Turkic languages, Turkish and Yakut (besides Fenno-Ugric and Samoyedic languages). Similarly **Grunzel** (1890, 1895) included the Japanese material in his comparison of Turkic, represented usually by Turkish, occasionally also Uyghur, Čaghatai, Yakut, Čuvaš etc., with Mongolic, represented by Written Mongol, Kalmyk and Buryat, and Tungusic, represented by Manchu and Evenki. In spite of its promising title *Studien zur Vergleichung des Japanischen mit den uralischen und altaischen Sprachen*, the study of **Pröhle** (1916–17) is limited to the Japanese-Uralic comparison. **Ramstedt** (1924 /1951) demonstrated his acceptance of affiliation of Japanese into 'his' Altaic club, but he never went beyond individual lexical comparisons. For instance, in his *Paralipomena of Korean etymologies* (Ramstedt 1982), there are *c*. 30 Japanese parallels against *c*. 100 Turkic parallels, not to mention hundreds of Mongolic or Tungusic comparanda. In the following *c*. four decades several scholars are interested in these questions (see Lewin 1976; Sohn 1980). Among them, at least three names should be mentioned, **Shirō Hattori** (1944, 1959) and **Johannes Rahder** (1940a, b; 1941; 1951–1954; 1956–1963) and **Charles Haguenauer** (1950, 1956, 1976). In the latter 1950s and during the 1960s a new generation of scholars studying the Japanese-Altaic relations began to publish. They are represented by such names as **Shichiro Murayama** (1958, 1962a, b, 1966, 1975, 1977), **Lee Ki-Moon** (1963). They are followed by **Roy Andrew Miller** (1967a, b, 1968, 1969, 1970, 1971, 1975a, 1977, 1985, 1985+1986, 1987, 1992–93, 1996); **John Street** (1978, 1980a, 1980b, 1981, 1985) and together **Miller & Street** (1975).

1.6. Formulation of the Altaic hypothesis

1.6.0. Bibliographic survey of Altaic linguistics

There are several useful independent studies or monograph chapters about history of comparative research on the Altaic languages. In chronological order e.g. **Poppe** 1926; **Benzing** 1953a, 1–14; **Baskakov** 1957, 5–20; **Poppe** 1965, 125–156; **Baskakov** 1981; **Manaster Ramer** 1996; **Manaster Ramer & Sidwell** 1997a & 1997b; **Georg, Michalove, Manaster Ramer, & Sidwell** 1999; **Georg** 2003; **Rachewiltz & Rybatzki** 2010, 348–355; **Stachowski** 2012; **Jankowski** 2013.

1.6.1. Early period – 17–19th century

The first mention about a common origin of the Turks and the Mongols probably belongs to the Čaghatai historian and ruler of the Khanate of Khiva, **Abu 'l-Ġazi Bahadur Khan** (1603–1663), who in his treatise *Šaǰara-i Tarakime* 'The genealogy of the Turkmen' (1659) judged that they 'sprang from some common source' (cf. Pallas 1776, 3; Georg 2003c, 430). On the other hand, **Peter Simon Pallas**, a great naturalist and researcher of Siberia, formulated the first areal conception (1776, 3): 'Die nicht sparsamen Worte, welche die tatarische Sprache mit der mongolischen gemein hat, und deren sich viele in der türkischen Sprache nicht antreffen lassen, können theils einer uralten Nachbarschaft und Gemeinsamkeit beyder Nationen, die wohl niemand leugnen wird, zugeschrieben werden, theils sind es die Spuren, welche die herrschende Mongolen bey den unterjochten Tataren hinterlassen musten.' It was probably the German orientalist working in Paris, **Julius Klaproth** (1823, 295), who first explicitly declared a common origin of the Tungusic, Mongolic and Turkic dialects: 'Die Tungusischen, Mongolischen und Türkischen Dialecte zeigen unter sich einen sonderbaren Zusammenhang.' Their common designation 'Altaic' should be ascribed to the Finnish linguist and researcher of Siberia, **Matthias Castrén**, who used this term for the first time in his diary in 1845 about a common location of these peoples: 'Aus derselben Ursache (= Uebereinstimmungen in grammatikalischer Hinsicht) übergehe ich auch die Gründe, welche sich vorfinden um eine Verwandtschaft 1) zwischen Tataren und Mongolen; 2) zwischen Mongolen, Mandschu unf Tungusen, welche Wölker sämmtlich der Altaikette angehören, anzunehmen.' (Castrén, *Reisebericht: Reise von Samarowa nach Surgut*, Juli-September 1845; see also Castrén 1856, 76). In reality, on the basis of comparison of personal and possessive pronouns and personal verbal affixes, Castrén was convinced about a wider realtionship, including the Fenno-Ugric and Samoyedic, i.e. together Uralic, languages, which was later called 'Uralo-Altaic': '..., quarum mentionem fecimus, linguas Finnicas, Samojedicas, Turcicas, Mongolicas atque Tungusicas communi complecti nomine, atque, ut

esset quo interea uteremur, appellavimus eas linguas altaicas, cum gentes ipsae ab ultima antiquitate fuerint atque magna ex parte adhuc sint regionum in vicinia montium Altaicorum incolae.' (Castrén 1850, 2). At almost the same time other scholars formulated similar conclusions, namely **Kellgren** (1847, 95): 'Es kostet keine grosse Mühe, um eine Menge von Wortstämmen zusammen zu finden, die das Finnische mit dem Ungarischen, Türkischen, Mongolischen und auch Mandschu gemein hat. Eine solche Zusammenstellung lag jedoch ausser meinem Zweck. Ich habe nur die allgemeinsten inneren grammatischen Gesetze der genannten Sprachen mit einander verglichen, weil durch die Uebereinstimmung dieser die Verwandtschaft von Sprachen nicht nur sicherer, sondern auch auf kürzerem Wege sich nachweisen lässt.' (cf. Manaster Ramer & Sidwell 1997, 157, fn. 3) or **Wilhelm Schott** (1849, 1): 'Das finnisch-tatarische Sprachgeschlecht hat, wie aus Überlieferungen der Türken, der Mongolen, und gewissen Andeutungen in finnischen Runot mit grosser Wahrscheinlichkeit hervorgeht, seine Urheimat auf und an der Riesenkette der Altai. Vier Hauptvölker sind es, welche von diesem Gebirge aus über Tungusien, über die unheheuren Hochländer zwischen Altai und Kuen-lün, über Nordasien und ansehnliche Theile Osteuropas sich ergrossen haben: Tungusen, Mongolen, Türken und Tschuden oder Finnen. ... Der Ausdruck "altai'isches Sprachengeschlecht" ist mir gleich bedeutend mit "finnisch-tatarisches", welche letztere Benennung auf die zur erweisende Verwandtschaft der sogenannten tatarischen Sprachen – Tungusisch, Mongolisch, Türkisch – mit den sogenannten finnischen hindeutet.' Schott devoted also other publications to demonstration of the 'Altaic', in reality 'Uralo-Altaic' relationship (Schott 1853, 1860, 1862, 1870). Some of numerous Schott's comparisons are valid, e.g. the non-trivial correspondence between Turkish *ajak*, Old Uyghur *adaq*, Yakut *ataq*, Čuvaš *ora* "foot", but his further comparison with Evenki *halgan* id. is wrong (Schott 1849, 63; cf. *EDAL* 1118–19, 1075–76). Most of them represent superficial similarities, e.g. Turkish *jüz* "face" vs. Written Mongol *josun* "manner, custom" (p. 107), although Schott tried to establish some series of regular phonetic correspondences. For instance, he mentioned the correspondence of Čuvaš *l* vs. Common Turkic **š* (Schott 1849, 120; already 1841, 13–14). Parallelly **Siebold** (1832: tables after p. 275) compared Manchu with Korean and Japanese (without any comments). **Boller** (1857a, 1857b) expanded his effort to comparisons among Japanese, Manchu, Written Mongol, Turkish and Yakut (besides Fenno-Ugric and Samoyedic languages). Like Schott he tried to keep some rough phonetic correspondences. **Grunzel** (1895) presented his attempt at Altaic comparative grammar with illustrative common morphemes from Turkish, occasionally also Uyghur, Čaghatai, Yakut, Čuvaš etc., Written Mongol, Kalmyk and Buryat, Tungusic, represented by Manchu and Evenki, and Japanese. He also added a comparative glossary of the mentioned languages, but without phonetic rules.

1.6.2. First classic generations – optimists

This rather voluntaristic approach was ripe for change. First it was realized in Indo-European linguistics in the last two decades of the 19th century. It is known as the Young Grammarian School with its center in Leipzig and represented especially by such a name as Karl Brugmann, his *Grundriss der vergleichenden Grammatik der indogermanischen Sprachen* (1886–1893; 2nd ed. 1896–1916) and the journal *Indogermanische Forschungen*, founded by him (and Wilhelm Streitberg) in 1892 and coedited by him till his death in 1919. The new Young Grammarian paradigm with its stress on regular phonetic rules and irregularities explainable via analogy became inspirational for other disciplines of comparative linguistics, first for Semitic, represented especially by Carl Brockelmann, and for Fenno-Ugric/Uralic, connected with the names Emil Nestor Setälä, professor of Finnish and founder and first editor of the new journal *Finnisch-Ugrische Forschungen* (from 1901), and Otto Donner, professor of Sanskrit and comparative Indo-European linguistics. Their student, **Gustaf John Ramstedt**[15] (1873–1950), began his linguistic career as a Fenno-Ugricist. His *Bergtscheremissische Sprachstudien* (Helsinki 1902a) is a valuable result of his field work from 1898 about Hill Mari folklore texts and lexicon. In the following years, inspired by Otto Donner, Ramstedt visited twice the territory inhabited by the people speaking various Mongolic languages and spent more than three years among them (see Poppe 1951b, 315). After his return he published two influential studies, comparing Khalkha and Classical Mongol on the level of phonology (1902), conjugation (1903) and pronouns (1906) in wider context. They were followed by a penetrating article about the Altaic numerals (Ramstedt 1907), which should be taken in account in every study of this topic. In the second decade of the 20th century Ramstedt came with several important articles, which became bases of his later Altaic comparative phonology and morphology, first devoted to verbal derivational morphology in Turkic and Mongolic (1912), others establishing regular phonetic correspondences (and excluding false ones) between Turkic, Mongolic, and occasionally also Tungusic (1913a; 1913b; 1915–1916; 1916–1920; 1932), besides studies tracing fragments of the Altaic grammar (1924; 1933–1935; 1945; 1950). After a series of studies about affiliation of Korean with the Altaic club (1928, 1933, 1939/1951, 1939/1997, 1949, and posthumously 1953, 1954, 1982) and *Kalmückisches Wörterbuch* (1935), in reality an attempt at an etymological dictionary, he had prepared material for two fundamental publications: *Einführung in die altaische Sprachwissenschaft*, I: *Lautlehre* and *Einführung in die altaische Sprachwissenschaft*, II: *Formenlehre*, published posthumously by his disciple

15 See the very competent evaluations of Ramstedt's life and work by Toivonen 1951; Poppe 1951b; Aalto 1975.

Pentti Aalto[16] (1917–1998) in 1957(a) and 1952 (in Russian 1957b) respectively (sic!). In the first two decades of the 20th cent. Ramstedt was supported by his Hungarian colleague **Zoltán Gombocz** (1887–1935), also operating in both Fenno-Ugric[17] and Altaic. Gombocz (1905; in German 1913) summarized the phonetic correspondences between Turkic, Mongolic and Tungusic, established in that time. From the 1920's a new strong player appeared in the field of the Altaic comparative linguistics, the Russian German, later American **Nicholas (Nikolaj or Nikolaus) N. Poppe**[18] (1897–1991). He began with a series of articles demonstrating the phonetic correspondences between the Turkic, Mongolic and Tungusic languages (1924, 1925, 1926a). From among Poppe's contributions to the Altaic comparative grammar at least the articles about the plural suffixes (1952), verbal derivational suffixes (1972) and case suffixes (1977) should be mentioned. Probably most frequently quoted are two of Poppe's monographs, "Comparative phonetics" (1960), where also Korean was included, and "Introduction" (1965), bringing a first-class annotated bibliographic survey and basic information about the scripts applied to various Altaic languages. Valuable is also the condensed synthesis from 1964a. The German **Karl Heinrich Menges**[19] (1908–1999) fled the Nazi regime in Germany in 1936, and through Czechoslovakia reached Turkey, whence he moved to USA in 1938, where he spent almost 40 year at Columbia University. As emeritus, he returned to Europe, in Vienna, where he continued in teaching and his research. Menges was interested especially in Turkic and Tungusic linguistics, but his contribution to the Altaic comparative linguistics was also appreciable. He studied both lexical cognates and mutual borrowings in the case of cultural words (1951; 1982a; 1982b; 1983a; 1983b; 1986; 1987; 1988) and grammatical parallels, connecting the Altaic language (1966a; 1976; 1991). Some of Menges' important studies devoted to Altaic comparative linguistics developed ideas of other authors, e.g. Menges 1961 was inspired by Benzing 1953; Menges 1966b by Sinor

16 See Halén, H. 1977. Bibliography of Professor Pentti Aalto's publications 1938–1976. *Studia Orientalia* 47, 287–311; Id. 1987. Bibliography of Professor Pentti Aalto's publications from 1977 to 1987, with additions to the previous list. Studia Orientalia 59, 260–265. Cf. also Aalto 1987.

17 Cf. Gombocz, Zoltán & Melich, János. 1914–1944. *Magyar etymologiai szótár*. I. köt. I–X. füzet [*A–érdëm*], II. köt. XI–XVII. füzet [*erdő–geburnus*]. Budapest: *Magyar Tudományos Akadémia*. Although unfinished, it was the first attempt at a serious etymological dictionary of any Fenno-Ugric language at all.

18 See Cirtautas, Arista Maria. 1977. Nicholas Poppe: A bibliography of publications from 1924–1977. In: *Parerga* 4. Seattle: Institute for Comparative and Foreign Area Studies, University of Washington; Ead. 1982. Nicholas Poppe Bibliography 1977–1982. *Central Asiatic Journal* 26/3–4, 161–166; Alpatov, V.M. 1992. Lingvističeskoe nasledie N. Poppe. *Voprosy jazykoznanija* 1992, №3, 119–125; Id. 1994. *Nikolaj-Nikolas Poppe*. Moskva: Vostočnaja literatura.

19 See the excellent book of Knüppel (2006a), who brings not only an exhausting survey of all publications of Menges, but also informs us about his courses at universities in Berlin, Ankara, Berkeley, Stamford [Conn.], New York (Columbia), Berlin (Free University), Frankfurt, Helsinki, Uppsala, Sapporo, Vienna. Probably most valuable is the unique index of all lexemes and proper names, discussed by Menges in his studies (pp. 175–391).

1962; Menges 1975 by Miller 1971; Menges 1984 by Lee Ki-Moon 1977, etc. The Japanese **Shichirō Murayama** (1908–1995) was a disciple of Nicholas Poppe, which is apparent from Murayama's studies in which he convincingly demonstrated the Altaic component in Japanese glottogenesis (1958; 1962a; 1966; 1975; 1976). **Denis Sinor**[20] (originally Dénes Zsinór, 1916–2011), studied under Gyula Németh in Budapest, then fought against the Nazis in France, where he became a French citizen, in 1948–1962 lectured at Cambridge University, and later founded the center of Central Asian Studies at Indiana University in Bloomington. He summarized his publications devoted to various aspects of comparative Altaic linguistics into one volume (Sinor 1990). The youngest member of this 'classic' generation, the prematurely deceased **Udo Posch**[21] (1922–1965), managed to publish two important syntheses about the Altaic theory (1958; 1964). The American **Roy Andrew Miller**[22] (1924–2014), who began with research in Tibetan, is known especially for his re-introduction of Japanese into the Altaic club, in contrary to his predecessors based on established phonetic rules (1967b, 1968, 1970, 1971, 1975a). But he significantly contributed to the Altaic comparative phonology and morphology too (1977, 1985, 1985+1986, 1987, 1991, 1992–1993, 1996, 2003, 2008a; together with John C. Street 1975). Similar was the career of his countryman **John Ch. Street**[23] (1930–2017), who concentrated especially on Mongolic and Japanese, including the Altaic perspective (1974, 1978, 1979, 1980a, 1980b, 1981, 1984, 1985). While in 1962 in his review of Poppe (1962) he admitted the Altaic affiliation of Ainu, in his detailed review of Patrie (1982), Street (1983) rejected it. The Turk **Talat Tekin**[24] (1927–2015) studied under Denis Sinor and John Krueger. He concentrated especially on the Turkic languages, but accepted their Altaic affiliation (his collected writings about this topic were published in 2003). He also discussed about the position of Japanese within Altaic (1993). Ramstedt and Poppe and their approach to Altaic linguistics had also followers in the Leningrad (today again Saint Petersburg) center of Tungusic studies, represented e.g. by **Glafira M. Vasilevič** (1895–1971), **Vera I. Cincius** (1903–1983), **Vera D. Kolesnikova** (1909–?), **Orest P. Sunik** (1912–1988) and others. During 1970's and 1980's they and their colleagues from various other departments published many valuable articles in five collective volumes, all edited by O.P. Sunik, devoted to comparative Altaic linguistics: *Problema obščnosti altajskix jazykov* (1971); *Očerki sravniteľnoj leksikologii altajskix jazykov* (1972); *Očerki sravniteľnoj morfologii altajskix jazykov* (1978); *Issledovanija*

20 Cf. Altaistic Bibliography of Denis Sinor. In: *Florilegia Altaistica. Studies in Honour of Denis Sinor – On the Occasion of his 90th Birthday*, edited by Elena V. Boikova & Giovanni Stary, with the assistance of Elizabeth & Charles Carlson. Wiesbaden: Harrassowitz, VII-XVII. Further Alpatov, Vladimir M. 2001. Denis Sinor. Jubilej učenogo. In: *Altaica* V (Moskva: Institut vostokovedenija RAN), 9–13.

21 Altaistic contributions by Udo Posch (1922–1965). *Central Asiatic Journal* 11/2 (1966), 144–146.

22 See Menges & Naumann 1999; further <https://en.wikipedia.org/wiki/Roy_Andrew_Miller> .

23 https://wisc.academia.edu/JohnCStreet.

24 Ölmez, Mehmet. 2016. In memory of Professor Talat Tekin (1927–2015). *Altai Hakpo* 26, 181–186.

v oblasti ėtimologii altajskix jazykov (1979); *Altajskie ėtimologii* (1984). Let us mentions three basic thematic fields and most important contributions: General and methodological questions of the Altaic relationship – **Baskakov** 1971; **Gercenberg** 1971; **Jaxontov** 1971; **Kormušin** 1971; **Sunik** 1971a. Altaic comparative grammar – **Cincius & Letjagina** 1978; **Nasilov** 1971, 1978; **Sunik** 1971b, 1971c, 1978a, 1978b. Altaic comparative lexicology – **Bugaeva** 1984; **Cincius** 1971a, 1971b, 1984a, 1984b; **Cincius & Bugaeva** 1979; **Dmitrieva** 1979, 1984; **Kolesnikova** 1971, 1972a, 1972b, 1979; **Vasilevič** 1971.

Although they followed in general the classics Ramstedt and Poppe, **Vladislav M. Illič-Svityč** (1963, 1965, 1968, 1971) and **Vera I. Cincius** (1972, 1984b) did not keep their reconstruction of the binary opposition for proto-Altaic stops and proposed the ternary opposition (see below). The traditional approach of Ramstedt and Poppe was kept in the useful survey *Altajskaja sem'ja jazykov i ee izučenie* (Moskva 1981) by the Russian Turkologist **Nikolaj A. Baskakov**[25] (1905–1995), and in the collective monograph *Altajskie jazyki* (Moskva 1993).

1.6.3. First classic generation – skeptics

In contrary to Ramstedt the Hungarian **Gyula (Julius) Németh**[26] (1890–1976) approached the Turko-Mongolic relations with doubts (1912a, 1912b, 1914a, 1914b). During the 1930's the Polish orientalist **Władysław Kotwicz**[27] (1872–1944) wrote several important studies devoted to comparative Altaic linguistics (1931, 1936), although some of them were published only posthumously (1953, in Russian 1962; 2012 by **Kamil Stachowski**). It is necessary to stress that the first publications of Kotwicz are older, e.g. his grammar of spoken Kalmyk from 1915 (Petrograd) and 1929 (Řevnice u Prahy). Kotwicz preferred more likely the areal conception of relations between the Altaic branches, cf. also his article about Turkic impact on Manchu (1939). Németh and Kotwicz had followers in other more or less skeptically oriented Altaicists. In spite of their reserved stances their contributions to the comparative Altaic linguistics are enormous. **Gerard Clauson**[28] (1891–1974), a first-class Turkologist and Mongolist, but also respected specialist in Indology and Tangut language, besides Buddhist religion, expressed his doubts about the Altaic conception with valuable philologic comments in a series of studies:

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25 <https://ru.wikipedia.org/wiki/Баскаков,_Николай_Александрович>
<http://altaica.ru/personalia/bas_trudy.pdf>

26 See Róna-Tas, András. 1978. Julius Németh – Life and work. *Acta Orientalia Academiae Scientiarum Hungaricae* 32/3, 261–284.

27 Lewicki, Marian. 1953. Władysław Kotwicz (20.III 1872 – 3.X 1944). *Rocznik Orientalistyczny* 16, XI-XXIX.

28 About his life and work see V. L. Ménage. 1975. Sir Gerard Clauson. *Journal of the Royal Asiatic Society of Great Britain and Ireland*, 1975/2, 215–217.

1956; 1960a; 1960b; 1960c; 1961; 1969; 1973a (pp. 40–41 on homelands of the Turks, Mongols and Tungusians); 1973b (esp. pp. 52–54); 1975. With regard to his training in classic languages and Sanskrit, rather surprising is confession of Clauson (1962, xii), why he rejected the Altaic relationship: 'As a young man I had always accepted the theory that the Turkish and Mongolian languages were genetically related. It seemed *prima facie* probable, but I was not greatly moved by the subject; it was Turkish and not Mongolian, that interested me. But I did accept it, and so when a Romanized text of the *Secret History of Mongols*, a work that did expect to interest me, became available, I tried to read it. I did not begin to understand it, and I could find nothing Turkish about the language in which it was written. And so I came to the conclusion that the theory that the Turkish and Mongolian languages were genetically related – the Altaic theory – was almost certainly wrong.' In this perspective the fact that a knowledge of Homeric epics does not imply understanding e.g. Avesta or Ṛgveda may be comparably frustrating. But does it exclude the relationship of Greek with Avestan or Sanskrit? **Johannes Benzing**[29] (1913–2001), an excellent Turkologist, Mongolist, Tungusologist and Iranist; the author of a thin, but valuable annotated bibliographic survey *Studium der Altaischen Philologie und Turkologie* (1953a). **Gerhard Doerfer**[30] (1920–2003), the top-specialist in three classical Altaistic disciplines, Turkology, Mongolistics and Tungusology, plus Iranistics, wrote at least three sets of publications, where he expressed his doubts about the genetic background of the Altaic language unity: (a) Generally oriented studies, discussing the problems of borrowing and accidental similarity in various language families: 1973, 1981a; 1988c; (b) Studies devoted to methodological questions of the Altaic unity: 1963, 1966, 1968b, 1972, 1975b, 1981b, 1984a, 1988a; (c) Studies analyzing the concrete lexical material, interpreted by Doerfer as a result of interference between two Altaic branches: 1984c, 1985a, 1985b, 1992, 1993. Rather aside stands the article, where Doerfer (1974) thought about the position of Japanese in relation to the Altaic languages. Although Doerfer has been quoted as an Anti-Altaicist number one, his position was more structured, judging upon his words: 'I must confess that in most points I enjoy agreeing with the classical view of such men as Ramstedt and Poppe. It is useful that new ideas have arisen and that the old views thus have been tested again and again, but I think in a quite overwhelming majority of cases the classical theory has turned out to be correct. The author of these lines has turned back to classical theory in many cases, e.g., in the question of Tu[rkic] *h-* < PTu[urkic] **p-* or in the question of rhotacism / lambda-

29 See Johanson, Lars. 2001. Johannes Benzing (1913–2001). *Turkic Languages* 5, 165–168. A collection of Benzing's numerous reviews, plus his almost complete bibliography, were edited by Johanson, Lars & Schönig, Claus (eds.). 1988. *Kritische Beiträge zu Altaistik und Turkologie: Festschrift für Johannes Benzing.* Wiesbaden: Harrassowitz (Turcologica, 3).

30 Lars Johanson. 2004. Obituary: Gerhard Doerfer (1920–2003). *Turkic Languages* 8/1, 3–6. Doerfer's bibliography was compiled by Knüppel 2000, 2005, 2010, 2014; cf. also Schwarz & Blažek 2015.

cism. In other cases he has always thought the classical theory to be correct.' (Doerfer 1975–76, 3–4). A similar honor expressed Doerfer to his former teacher, Karl H. Menges (in a private letter to Václav Blažek from 1997). **Aleksandr M. Ščerbak**[31] (1926–2008) concentrated especially on the Turkic languages and their relations to Mongolic, which are explained by him in the areal perspective (e.g. 1959; 1961; 1963; 1966; 1986; 1987b, with Turkish translation 1987[1992]; 1989; 1994; 1997; 2005).

1.6.4. Second optimistic generation

Following **Vladislav M. Illič-Svityč** (1934–1966), the Russian Japanist and Sinologist **Sergej A. Starostin**[32] (1953–2005) came with new impulses, when he tried to revise the phonetic correspondences established between Turkic, Mongolic, Tungusic and Korean by Ramstedt and Poppe, and extended them to include Japanese (1986; 1991; 1995; 2000). Together with his colleagues Anna V. Dybo and Oleg A. Mudrak, both concentrated especially on the Turkic and Tungusic, occasionally also on Mongolic, languages, they published the ambitious three-volumed *Etymological Dictionary of the Altaic Languages* (Leiden – Boston: Brill 2003), usually abbreviated *EDAL*. They included detailed comparative phonetics of the daughter branches, Turkic, Mongolic, Tungusic, and finally Altaic (see below), basic grammatical isoglosses, and especially the etymological dictionary, consisting of *c*. 2800 entries (for comparison, Poppe 1960 operated with *c*. 570 proto-Altaic reconstructions – see Street 1974). **Anna V. Dybo**[33] (*1959) published several independent studies devoted to the Altaic lexicon or historical phonology (1986; 1990; 1995; 1996; 2000a; 2000b) and similarly **Oleg A. Mudrak** (*1962) with the article on clusters with Altaic **l* (2008). The Russian Japanist and historian of linguistics, **Vladimir M. Alpatov**[34] (*1945), presents and defends the results of Starostin and his team (1997, 2007a, 2007b, 2011, 2013).

1.6.5. Second skeptic generation

The American Japanist **J.Marshall Unger**[35] (*1947) remains skeptical concerning the relationship of Japanese with Korean and other Altaic branches (1990a, 1990b, 2000, 2009). The Finnish **Juha Janhunen**[36] (*1952) became renowned already at the age of

31 See S.D. Miliband. 2008. *Vostokovedy Rossii: XX – načalo XXI veka: Biobibliografičeskij slovar'*, Kniga 2 (Н-Я). Moskva: Vostočnaja literatura, 689–690.
32 See Bengtson & Blažek 2005.
33 See Schwarz & Blažek 2014 and <http://iling-ran.ru/main/scholars/dybo>
34 https://www.ivran.ru/persons/VladimirAlpatov
35 https://osu.academia.edu/JMarshallUnger
36 Hyytiäinen, Tiina, Jalava, Lotta, & Saarikivi, Janne, et alii (eds.). 2012. Bibliography of the Publications of Juha Janhunen. In: *Per Urales ad Orientem. Iter polyphonicum multilingue. Festskrift*

25, thanks to his excellent reconstruction of the Samoyedic protolanguage (1977). In 1981 he presented a new model of reconstruction of the Uralic protolanguage, which was followed by Pekka Sammallahti (1988) and today is generally accepted by the younger generation of specialists in Uralic linguistics. Besides his synchronic descriptions of Khamnigan Mongol (1990, 1992a, 2003a) and Khamnigan Evenki (1991), syntheses of the Mongolic linguistics (2003c, 2012a) and ethno-linguistic surveys of Tungusians and Manchuria (1985, 1996b, 2005, 2012c), Janhunen discussed the mutual relations between the Altaic branches (with Kho Songmoo 1982: Korean-Tungusic; 1992b+1994: Japanese-Altaic; 1993: Mongolic origin of Jurchen teens; 1996a: Mongolic-Tungusic; 2013: Altaic personal pronouns). He prefers the areal explanations of similarities, only in the case of the Mongolic-Tungusic relations is he willing to admit some deeper genetic relationship[37]. Interesting is Janhunen's discussion of similarities of systems of the personal pronouns between the core Altaic branches, Turkic, Mongolic and Tungusic[38].

Alexander Vovin[39] (*1961) studied Japanese in Leningrad (since 1991 again Saint Petersburg). In 1990 he moved to USA, first to the University of Michigan and Miami University, later University of Hawaii in Manoa (1995–2013). Since 2014 he leads the Centre de recherche linguistique sur l'Asie orientale de Ecole des hautes études en sciences sociales in Paris. In his earlier studies Vovin supported the Altaic

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tillägnad Juha Janhunen på hans sextioårsdag den 12 februari 2012. Helsinki: *Suomalais-Ugrilaisen Seuran Toimituksia / Mémoires de la Société Finno-Ougrienne* 264, 507–542.

37 Janhunen 1996, 209: 'This paper is based on the anti-Altaic conception that the lexical parallels quoted in favor of the so-called Altaic hypothesis {Ramstedt 1952–1966; Poppe 1960} are mainly to be explained as loanwords between Turkic and Mongolic, on the one hand, and between Mongolic and Tungusic, on the other. The illusion of genetic relationship between the three groups of languages is largely due to the non-binary approach applied in conventional Altaic comparisons. It is this methodological error that has also allowed hypothesis to be extended to comprise other languages, notably Korean and Japanese.'; p. 216: '... the likelihood of a binary relationship between Mongolic and Tungusic appears greater than within any pair of adjacent entities. It cannot be ruled out that a sufficient corpus of lexical cognates shared by Mongolic and Tungusic can be identified in the future. ... Just in case such comparisons should yield a positive result, it may here also be suggested that the deeeper level language family covering Mongolic and Tungusic should be called not Altaic but *Khinganic*.'

38 Janhunen 2013, 224: 'Although the pronominal corpus is too limited and too isolated to "prove" any genetic connections between the Core Altaic families, the similarities between the systems are too specific to be explained by universally or even areally conditioned structural tendencies in the context of the M–T system. Interaction between ancient speech communities has certainly been a relevant factor, and it is likely to have involved both direct borrowing and "shared drift". It has to be stressed that "shared drift" can be equally relevant between related and unrelated languages. Insofar as the broad-scale pronominal parallels in the Transeurasian zone are ultimately connected with structural tendencies and early areal contacts, rather than shared genetic heritage, the specific parallels exhibited by the Core Altaic pronouns do not make a case for a specific genetic relationship between these three language families. For that, a material corpus extending much beyond personal pronouns would be needed.'

39 <https://ehess.academia.edu/AlexanderVovin>; <http://www.altaist.org/home/confessions/a-vovin/>; <https://ehess.academia.edu/AlexanderVovin/CurriculumVitae>

relationship and brought some new positive arguments (e.g. 1993b; 1994a; 1994b; 1995; 2000; 2001a; 2001b), later he became a sharp critic, e.g. in his reviews of *EDAL* (Vovin 2005b; cf. the reply of Dybo & Starostin 2008) or Robbeets 2005 (Vovin 2009). On the other hand, his critical contributions e.g. of the Jurchen/Manchu-Korean lexical parallels (Vovin 2006, 2007b, 2014) seen in the areal perspective are convincing and useful. Similarly, his careful evaluation of the Korean-Japonic grammatical and lexical parallels (Vovin 2005–2009, 2010) demonstrates that the process of mutual borrowing was also stronger, although the limited distribution of some terms should not be a reason to exclude them from any deeper comparison[40]. As a proof of genetic relationship, Vovin (e.g. 2017b, §3) demands a shared paradigmatic morphology. If it is preserved, it represents a convincing proof. But there are numerous examples of transparently related languages, which share few or minimum material correspondences from their original paradigms, e.g. modern Swedish vs. Icelandic, not to mention such pairs as e.g. Danish vs. Breton, Albanian vs. Hindi etc. On the other hand, one of the ambitions of the present book is to reconstruct the traces of inherited paradigms in nominal and pronominal morphology of all five Altaic branches. Perhaps the most important merit of Vovin's recent research is his identification of relic Japonic languages from the Korean Peninsula, beginning with the already studied Pseudo-Koguryŏ, further the Japonic substratum in Paekche, Silla, Karak, plus Chejudo (Vovin 2017b, §2, tables 4–8). It changes the old picture, built only on Old & Middle Japanese data. **Stefan Georg**[41] (*1962) concentrates especially on the languages of Siberia, but his competencies also cover the Sino-Tibetan, Kartvelian, Semitic and Indo-European linguistics. In the field of the Altaic linguistics he is interested especially in the Mongolic and Tungusic languages, besides the methodological questions of mutual comparisons of all members of the Altaic club. In his article about body part terms in Turkic, Mongolic and Tungusic (Georg 1999–2000) he analyzed 11 anatomic terms and his conclusion was negative – the rare cognates should be explained as borrowings. It is interesting that in a discussion about Altaic the specialist in Indo-European, Leonard Gercenberg (1971), similarly analyzed the Indo-European lexicon

40 As a textbook parallel can serve the comparison of distributions of the Latin words for „horse": From the point of view of dispersion the most wide-spread Romance terms for „horse" are continuants of Latin *caballus* [first used by Gaius Lucilius; 180–102 BCE]: Romanian *cal*, Italian *cavallo*, Logudorese *kaḍḍu*, Engadine *k'aval'*, Friulish *k'aval*, French *cheval*, Provençal, Catalan *cavall*, Spanish *cavallo*, Portuguese *cavalo* „horse" (Meyer-Lübke 1935, #1440). Old Latin *equos* [Livius Andronicus, 3rd cent. BCE], Classical Latin *equus* continued only in Sardinian *ebbu* „horse". Better preserved was the feminine *equa* „mare", although it was eliminated from modern Italian, Rhaeto-Romance or French: Romanian *iapă*, Logudorese *ebba*, Venetian dial. (Val Sugana) *eka*, Old Engadine *iefna*, Old French *ive*, Provençal *ega*, Catalan *egua*, *euga*, Spanish *yegua*, Portuguese *egoa* (Meyer-Lübke 1935, #2883). Applying mechanically the criterion of dispersion, we should determine *caballus* as older, but it was probably borrowed from some Gaulish or Iranian source, while *equos/equus* was inherited from proto-Indo-European *$*H_1ek\hat{u}o$-* „horse".

41 <https://uni-bonn.academia.edu/StefanGeorg>

and results were comparably scarce, if the meanings are required to be strictly identical. On the other hand, specialized studies of Kolesnikova (1971, 1972a) and Dybo (1996) demonstrate the existence of the relatively rich anatomic terminology shared by the Altaic languages. The methodological approach illustrated by a couple of examples is the main reason for Georg's sharp criticism of *EDAL* (Georg 2004b, 2005; cf. the reply of S. Starostin 2005) and of Robbeets 2005 (Georg 2008). On the other hand, for both anti– and pro-Altaic camps, articles about the history of Altaic studies are valuable (Georg 2003c; Georg, Michalove, Manaster Ramer & Sidwell 1999). The Turkish Turkologist and Mongolist **Mehmet Ölmez**[42] (*1963) follows his teacher, Gerhard Doerfer, in skepticism about the Altaic conception (Ölmez 2013). Similarly **Claus Schönig**[43] follows his teacher Johannes Benzing and prefers the areal explanation of similarities among the Turkic, Mongolic or Tungusic languages (1995[1996], 2000, 2003, 2005). Probably in the same group may be included the Mongolist **Volker Rybatzki**[44], renowned thanks to a series of studies devoted to metal terminology in Turkic & Mongolic (1994, 1999) and Tungusic (2002) and a co-author of the excellent guide *Introduction to Altaic Philology* (Brill 2010), where (p. 355) one of the authors prefers the skeptical point of view (**Volker Rybatzki**?) and the other favors a more positive opinion, closer to the following group (**Igor de Rachewiltz**?).

1.6.6. First realistic generation

The Hungarian **Louis (Lájos) Ligeti**[45] (1902–1987) specialized in Mongolic, to a lesser degree also on Turkic linguistics and other Central Asiatic philologies. In his reaction to Clauson (1969) in three language versions, Russian (1971), Hungarian (1973), French (1975) he convincingly argued that besides parallels used by Clauson to demonstrate non-cognacy between Turkic, Mongolic and Tungusic, there were also synonyms or quasi-synonyms, which could be accepted as related. Ligeti's countryman and follower, **András Róna-Tas**[46] (*1931), concentrates especially on Turkic and Mongolic linguistics and generally Central Asiatic philology. Concerning the Altaic hypothesis (cf. 1976), he prefers to explain most of proposed lexical comparisons from areal influences, but admits that some part of the core lexicon, regularly shared by Turkic, Mongolic and Tungusic, may really be inherited (cf. 1974, 44–45 = 1986, 67–68). In his slim but highly informa-

42 https://mehmetolmez.academia.edu/research#papers; https://orcid.org/0000-0001-6422-954X

43 https://www.geschkult.fu-berlin.de/e/turkologie/institut/mitarbeiter/professor/claus_schoenig.html

44 https://helsinki.academia.edu/VolkerRybatzki

45 See Paulik, Ágnes. 2002. Bibliography of Louis Ligeti. *Acta Orientalia Academiae Scientiarum Hungaricae* 55, No. 1/3, 5–23. Róna-Tas, András. 2012. In memoriam Lajos Ligeti (1902–1987). *Acta Orientalia Academiae Scientiarum Hungari* 65, No. 2, 123–136.

46 See *Róna-Tas András publikációs listája* in <https://hu.wikipedia.org/wiki/Róna-Tas_András> .

tive booklet *An Introduction to Turkology* (Szeged 1991, 17), he repeated his position: 'The opinion of the author of this *Introduction* is that those linguistic correspondences which have been quoted by Ramstedt, Poppe and their followers as arguments in favour of the genetic affinity of the Altaic languages cannot be accepted as such. They witness early contacts and are loanwords. Nevertheless after having separated these very old layers, the remaining very thin layer may pertain to a common Altaic proto-language.' This strong Hungarian generation of Altaists prepared proficient followers: **László Károly**[47] (*1974), now working at Uppsala University, who can offer two fresh studies on the Altaic topic (2013, 2014), and **Béla Kempf**[48] (*1976), Mongolist in specialisation, and an author of a critical, but not destructive, review of *EDAL* (Kempf 2008).

1.6.7. Second realistic generation

After the classic Kotwicz and his Polish followers in the field of Turkic, Mongolic and Tungusic studies, **Marian Lewicki** (1908–1955), **Stanisław Kałużyński** (1925–2007) and **Jerzy Tulisow** (*1943), two Polish Turkologists comment on the development of Altaic linguistics from a moderately positive perspective, including their own studies: **Henryk Jankowski** (*1951) – 1987, 2013; and **Marek Stachowski**[49] (*1957) – 1998a, 1998b, 1999, 2005, 2008, 2011, 2012. The German Turkologist and Sibirologist **Michael Knüppel**[50] (*1967) from Göttingen, a tireless reviewer and author of detailed bibliographies (e.g. of Menges or Doerfer), usually factually critical, is tolerant of the Altaic genetic conception including Japanese (cf. his critical review of Robbeets 2005a[51]). Into this group may also be ranked the American Mongolist **William (Vincent) Rozycki**[52] (1949), in recent years operating in Japan. Although he prefers the areal explanations of lexical similarities between the Altaic branches (cf. 1990, 1993b, 1994a, 2001), in his most frequently quoted book *Mongol Elements in Manchu* (Bloomington 1994) he admits that at least the common pronominal roots can be inherited. In his review of Robbeets 2005a (Rozycki 2006) he evaluates positively the approach of the author and her results.

47 https://uppsala.academia.edu/LaszloKaroly
48 https://u-szeged.academia.edu/BélaKempf/CurriculumVitae
49 <http://www2.filg.uj.edu.pl/ifo/kjasis/~stachowski.marek/pub.php>
50 http://www.uni-goettingen.de/en/99903.html
51 Knüppel 2006b, 161: 'Der Rezensent selbst ist, um das an dieser Stelle zu betonen, kein grundsätzlicher Gegner der Annahme der Möglichkeit einer japanisch koreanisch-altaischen Verwandtschaft, einer japanisch-koreanischen Verwandtschaft oder auch „bloß" einer altaischen Verwandtschaft und lehnt ganz gewiß auch keine Forschungen in dieser Richtung „aus Prinzip" ab – ganz im Gegenteil, wird jeder Beitrag, der zu einer tatsächlichen Erhellung der Verhältnisse – unabhängig von der Tendenz („pro-altaisch" oder „anti-altaisch" – um diese im Grunde nichtssagenden Attribute einmal mehr zu bemühen) – beiträgt, ausdrücklich begrüßt.'
52 https://u-aizu.academia.edu/WilliamRozycki/CurriculumVitae

1.6.8. Third generation – realistic optimists

The Belgian Japanist and Koreanist **Martine I. Robbeets**[53] (*1972) came into the field of comparative Altaic linguistics impressively, with the book *Is Japanese Related to Korean, Tungusic, Mongolic and Turkic?* (Harrassowitz 2005), where on 975 pages she evaluated the plausibility of Japanese comparisons with other Altaic branches included in *Etymological Dictionary of the Altaic Languages* (Brill 2003). She established the most probable rules for phonetic and semantic correspondences. From 2055 lexical and 59 grammatical entries she confirms the validity of 359 (17.5%) and 14 (23.7%) items respectively. This means a significant reduction of the Japanese-Altaic corpus from *EDAL*, but it is enough to confirm the genetic affiliation of the Japonic branch within Altaic, and so the author answers 'yes' on the question from the title (Robbeets 2005a, 422–23). In principle the book is a review of *EDAL* – its 975 pages probably represents the world record for review. In comparison with other reviews of *EDAL*, criticizing (usually rightfully!) only several details or individual etymologies from the whole etymological corpus consisting of around 2,800 lemmas, Robbeets verified almost 75% of them. She also proposed a revision of the system of phonetic correspondences among the Altaic branches, developed by Starostin, Dybo & Mudrak in 1986–2003 (see below). Her new system of the sound rules is closer to the model formulated by Ramstedt and Poppe, although Robbeets has modified it further (e.g. 2005b, 2008, 2014a, 2016a, 2017a). She is most active in the field of comparative grammar of the Altaic languages, for which she introduces the more apposite term 'Transeurasian', reserving the term 'Altaic' to the three core branches, Turkic, Mongolic, Tungusic, sometimes also called 'Micro-Altaic' (2000, 2007b, 2007c, 2010, 2012, 2014b, 2014c, 2014d, 2015, 2016a, 2016b, 2017c, 2017g). In other studies she concentrates on methodological questions of comparison of the Transeurasian languages (2005b, 2009, 2017d). Extraordinarily important is her research on the Transeurasian lexicon in perspective of archaeology, historical demography and genetics, allowing her to formulate new conclusions about the mutual relations of all five branches, their partial homelands and the hypothetic homeland of their common, Transeurasian, protolanguage, including the hypothetic chronology of its divergence (2017a, 2017b, 2017e, 2017f; Robbeets & Bouckaert 2018). Besides her own numerous studies she mediated 64 older contributions devoted to the Altaic / Transeurasion conception, both positive and critical, divided into four volumes: I. The History of the Debate; II. Phonology; III. Morphosyntax; IV. Stability and Borrowability (*Transeurasian Linguistics: Critical Concepts in Linguistics*, edited by Martine Robbeets, Routledge 2017). The Transeurasian project of revision of the preceding Altaic conceptions becomes so attractive that it even addresses representatives of the second generations of both camps, skep-

53 https://shh-mpg.academia.edu/MartineRobbeets

tics such as **Volker Rybatzki** (see above) and optimists such as **Anna Dybo** (cf. 2016; see also above) or the Mongolist **Il'ja Gruntov**[54], in the past a collaborator on *EDAL*. In his discussion of the Turko-Mongolic relations from both genetic and areal perspectives (2007) he demonstrates his realistic approach to the topic. Already his dissertation (2002) dealt with the Altaic nominal declension. Extraordinary valuable is his website *Monumenta Altaica*[55], where are concentrated pdf-versions of most of important studies in the field of Altaic descriptive and comparative linguistics. His frequent co-author, **Ol'ga M. Mazo**[56] (*1975), is also a specialist in Mongolic, plus Chinese languages. They both prepare a chapter devoted to the nominal declension in the Transeurasian project managed by Martine Robbeets. Another representative of the younger generation in this project is **Alexander Savelyev**[57], a Turkologist oriented in Čuvaš.

The research direction introduced and led by Martine Robbeets is appealing for the author team of the present monograph too. We are honoured by the opportunity to cooperate with her and her research team. Our current results may be applied in both this book and the Transeurasian project, cf. **Blažek** 1987, 1997/1999 (with re-publication in 2017), 2005/2007, 2008, 2009, 2013; **Blažek & Schwarz** 2014, 2015a, 2015b, 2015c; **Schwarz & Blažek** 2010, 2011, 2012, 2013, 2014, 2015.

54 https://iling-ran.academia.edu/IlyaGruntov
55 http://www.altaica.ru/
56 https://www.hse.ru/en/org/persons/209813085#sci
57 https://shh-mpg.academia.edu/AlexanderSavelyev

2. Distribution and demography of the living languages

2.1. Turkic languages – survey

Turkic languages are represented by *c*. 180 million speakers, from Western Europe, where only in Germany there are c. 1,8 mill. Turks and Kurds speaking Turkish, to Saryg-Yughurs from the Chinese province Gansu or Yakuts from the lower Kolyma on the 160th longitude. In Europe (including the European part of Russia) the Turkic languages became the second most numerous language family with *c*. 25 mill. speakers, after Indo-European and before Uralic.

The present survey follows the 21st edition of *Ethnologue*[58] from February 2018.

Afšari – see **Azerbaijani, South**

Altai, Northern – see **Teleut**

Altai, Southern
Alternate Names: Altai, Oirot, Oyrot.
Autonym: алтай тили (Altay tili), алтайча̡ (Altajča)
Population: 57,400 (2010 census). Ethnic population: 74,200 (2010 census). Includes Northern Altai.
Location: Altai, Gorno-Altai Ao Mountains, along Mongolia and China border.
Dialects: Altai Proper (Altai-Kiži, Altaj Kizi, Maina-Kiži, Southern Altai), Talangit (Čuy, Talangit-Tolos, Telengit), Teleut. No intelligiblility of Northern Altai.
Writing: Cyrillic script; Mongolian script.

Azerbaijani, North
Alternate Names: Azerbaijan, Azerbaidžani, Azeri, Azeri Turk, Turkler.
Autonym: азәрбајҹан дили (Azərbaycan dili), азәрбајҹанҹа (azərbaycanca)
Population: Azerbaijan 8,250,000 (2011 UNSD), 4,000,000 monolinguals. Russia: 473,000 (2010 census); ethnic population: 603,000 (2010 census). Armenia: 20,000 (2004 J. Leclerc). Georgia: 270,000 (2014). Total users in all countries: 9,227,260.
Location: Azerbaijan; Russia: Dagestan Republic: south Caucasus mountains, Caspian coast; Georgia: Kakheti, Kvemo Kartli, and Samtskhe-Javakheti regions. Armenia.

58 https://www.ethnologue.com/subgroups/turkic

Dialects: Quba, Derbend, Baku, Šamakhi, Salyan, Lenkaran, Qazakh, Airym, Borcala, Terekeme, Qyzylbaš, Nukha, Zaqatala (Mugaly), Qabala, Yerevan, Nakhčivan, Ordubad, Ganja, Šuša (Karabakh), Karapapak. Qazakh dialect is not related to Kazakh. Significant differences from South Azerbaijani in phonology, lexicon, morphology, syntax, and loanwords.

Writing: Arabic script, Naskh variant, used until 1920s. Cyrillic script, widely used in Armenia. Latin script, official script in Azerbaijan since 1992.

Azerbaijani, South

Alternate Names: Azeri, Türki

Autonym: یلی د جانی‌آذربـا (Azərbaycan dili), جانجـای‌آذربـا (Azərbaycanca)

Population: Iran – 11,100,000 (2015 M. Izady); ethnic population: 18,700,000. Azerbaijan – 248,000. Iraq – 2,040,000 (2014 J. Leclerc). Syria – 44,000 (2014 J. Leclerc). Turkey – 540,000 (2014 J. Leclerc). Total users in all countries: 13,973,280.

Location: Iran – especially north and central; Iraq – At Ta'mim and Arbil governorates: Arbil and Kirkuk and area between them, Sar Qal'ah area near Diyala border; Mosul area. Syria – Hamah and Hims governorates: isolated central enclaves in both. Turkey – Igdir and Kars provinces.

Dialects: Aynallu (Inallu, Inanlu), Karapapakh, Tabriz, Afšari (Afsar, Afšar), Šahsavani (Šahseven), Moqaddam, Baharlu (Kameš), Nafar, Qaragozlu, Pišagči, Bayat, Qajar; in Turkey Kars. A member of macrolanguage Azerbaijani.

Writing: Arabic script, Naskh variant, used in Iraq and Iran. Arabic script, Nastaliq variant, used in Iran.

Balkan Gagauz Turkish

Alternate Names: Balkan Turkic.

Population: 327,000 (Johnstone 1993): 7,000 Surguč (1965) & 320,000 Yuruk. Total users in all countries: 331,000.

Location: Turkey – Edirne province (Surguč dialect).

Dialects: Gajol, Gerlovo Turks, Karamanli, Kyzylbaš, Surguč, Tozluk Turks, Yuruk (Konyar, Yoruk).

Writing: Latin script.

Note: Distinct from Gagauz of Moldova, Bulgaria, and Romania.

Baraba Tatar

Alternate Names: Eastern Tatar, Siberian Tatar.

Population: 101,000 (2012 M. Sagidullin).

Location: Tjumenskaja Oblast', Omskaja Oblast', Novosibirskaja Oblast'.

Dialects: Tobol-Irtyš, Baraba, Tom.

Writing: Unwritten.
Note: Different from Tatar.

Baškir

Alternate Names: Baškort, Bašqort, Basquort.

Autonym: башҡорт теле (Başq̣ort tele), башҡортса (Başq̣ortsa).

Population: Russia – 1,150,000 (2010 census). Ethnic population: 1,590,000 (2010 census). Total users in all countries: 1,252,070.

Location: Baškortostan Republic, Čeljabinskaja Oblast', Kurganskaja Oblast', and Sverdlovskaja Oblast'; between Volga river and Ural Mountains; beyond the Urals.

Dialects: Kuvakan (Mountain Baškir), Yurmaty (Steppe Baškir), Buržan (Western Baškir).

Writing: Cyrillic script.

Crimean Tatar

Alternate Names: Crimean, Crimean Turkish.

Autonym: Qirim, Qirimtatar.

Population: Crimea 260,000 (2006 A. Goriainov); Bulgaria: 1,370 (2011 census); Romania: 22,000 (2006 A. Goriainov); Turkey: 100,000 (2014 J. Leclerc); Uzbekistan: 150,000 (2006 A. Goriainov). Total users in all countries: 573,540.

Location: Crimea; Bulgaria – Dobrič province: Krušari municipality; Romania – Constanta department: Dobruja; Turkey – Ankara province: Polatli district, Karakuyu, several villages; Uzbekistan – Navoiy and Samarqand regions.

Dialects: Northern Crimean (Crimean Nogai, Steppe Crimean), Central Crimean, Southern Crimean.

Writing: Cyrillic script. Latin script, official use since 1997.

Čulym

Alternate Names: Čulim, Čulym Tatar, Čulym-Turkish, Melets Tatar.

Population: 44 (2010 census). Ethnic population: 360 (2010 census).

Location: Khakasija, north of Altai Mountains, Čulym river basin, Ob river tributary.

Dialects: Lower Čulym, Middle Čulym. Similar to Šor.

Note: Also spoken by the Kacik (Kazik, Kuarik).

Čuvaš

Alternate Names: Bulgar.

Population: 1,243,000 in Russian Federation, all users. First language users: 1,043,000 (2010 census). Second language users: 200,000. Ethnic population: 1,440,000 (2010 census). Total users in all countries: 1,280,000.

Location: Čuvašija Republic.
Dialects: Anatri, Viryal.
Writing: Cyrillic script.

Dolgan
Alternate Names: Dolgang.
Population: 1,050 (2010 census). Ethnic population: 7,890 (2010 census).
Location: Krasnojarskij Kraj: Dudinka and Khatanga counties; perhaps in Sakha.
Writing: Cyrillic script.
Note: Contact language on Tajmyr Peninsula spoken by Evenki, Nganasan, and long-term Russian residents. Different from Yakut.

Einu
Alternate Names: Abdal, Aini, Ainu, Aynu, Eynu
Population: 6,570 (2000).
Location: China – Xinjiang Uyghur Autonomous Region: Hetian, Luopu, Moyu, Shache, Shulekuche, and Yingjisha counties; Yengixar (Shule) town, Hanalik and Paynap villages in Kashgar area, and Note: It has the same grammar as Uyghur but much Persian vocabulary. Some consider it a dialect of Uyghur, others an Iranian language heavily influenced by Uyghur.

Fuyu Kirgiz
Alternate Names: Abakan Tatar, Fuyu Ka'erkezi, Fuyü Gïrgïs, Hakasi, Khakhas, Khakhass, Manchurian Kirghiz, Yenisei Tatar.
Population: 10 (Salminen 2007). Ethnic population: 880.
Location: Heilongjiang province: Fuyu county north of Qiqihar.

Gagauz
Alternate Names: Gagauzi
Population: Moldova 138,000 (2009 UNSD); Bulgaria 5,000 (Salminen 2007); Ukraine 22,800 (2001 census), ethnic population: 31,900 (2001 census).
Total users in all countries: 189,720.
Location: Bulgaria – Dobrič province: Krušeri and Dobrič municipalities; Silistra province: Kaybardža and Atafar municipalities; Varna province: Aksakovo municipality; Moldova – Chisinau and Criuleni, districts; Gagauzia District; also, Leova, Cantemir, and Cimisilia districts; Cahul, Ceadîr-Lunga, Basarabeasca, Taraclia and Vulcânsti areas and towns; Ukraine: Odes'ka oblast': Izmail's'kyj district.
Dialects: Bulgar Gagauzi, Maritime Gagauzi.
Note: 89% speak it as a first language.

Writing: Cyrillic script, primary usage. Greek script, used until 1957. Latin script, used in Romania.

Ili Turki

Alternate Names: Ili Turk, T'urk, Taranči, Tu'erke, Tuerke

Population: 120 (1980 R. Hahn). The language of about 30 families (Salminen 2007). Total users in all countries: 240.

Location: China – Xinjiang Uyghur Autonomous Region: Ili Kazak autonomous prefecture, Gongliu, Nilka, Tekes, Xinyuan, Zhaosu, and other counties, Ili valley near Kuldja.

Note: Ili Turki is indistinguishable from the Central Uyghur variety spoken in the Ili (Ghulja) area (2015 A. Dwyer). Ethnically and linguistically distinct, discovered in 1956. Their oral history says they came from the Ferghana Valley (Uzbekistan and Kyrgyzstan) about 200 years ago.

Karačai-Balkar

Alternate Names: Balkarian, Balqar, Karacaylar, Karačai, Karačaicy, Karachay, Karačayla, Malqartil, Qaračaytil, Taulu til.

Population: 305,000 (2010 census). Ethnic population: 314,000 (2010 census). Total users in all countries: 311,380.

Location: Karačaevo-Čerkesija and Kabardino-Balkarija Republic.

Dialects: Balkar, Karačai-Baksan-Čegem.

Note: Used as the second language by Nogai.

Writing: Cyrillic script.

Karagas

Alternate Names: Kamas, Karagass, Tofalar.

Autonym: тоъфа дыл' (tofa dyl)

Population: 93 (2010 census). Less than 40 fluent speakers, same number of passive speakers (Salminen 2007). Ethnic population: 760 (2010 census).

Location: Siberia, Irkutskaja Oblast', Nižneudinsk district, Alygdžer, Nerxa, and Verxnjaja Gutara villages.

Writing: Cyrillic script.

Karaim

Alternate Names: Turkic Karaite.

Population: Lithuania – 75 (2014 UNSD); Ukraine – 6 (Salminen 2007). Ethnic population: 270. Total users in all countries: 81.

Location: Lithuania – Vilniaus County, Trakai district municipality. Ukraine – L'vivs'ka oblast': Luts'k town; Černivets'ka oblast': Halyč town.

Dialects: Trakai; Luts'k-Halyč.

Writing: Cyrillic script, used in Crimea. Latin script, used in Lithuania.

Kaškai

Alternate Names: Kaškay, Qašqa'i, Qašqay.

Population: 949,000 (2015 M. Izady).

Location: Iran – Fars province: most; Bušehr, Čahar Mahall va Bakhtiari, Esfahan, and Hormozgan provinces; Gačsaran, Firuzabad, and Širaz are centers.

Writing: Arabic script, Naskh variant. Arabic script, Nastaliq variant.

Kazakh

Alternate Names: Kaisak, Kazak, Kosach; in China Hazake, Kazak, Kazax. In Iran Gazaqi, Kazak, Kazakhi. In Mongolia Kaisak, Kazakhi, Kazax, Kosach, Qazaq, Qazaqi. In Turkey Kaisak, Kazakhi, Kazax, Kosach, Qazaq tili, Qazaqşa, Qazaqi.

Autonym: қазақ тілі (Qazaq tili), қазақша (Qazaqşa).

Population: Kazakhstan – 9,980,000 (2009 census); ethnic population: 10,100,000 (2009 census). China – 1,250,000 (2000 census): 830,000 Northeastern Kazakh, 70,000 Southwestern Kazakh (1982); 1,060,000 monolinguals. Iran – 3,000 (1982). Mongolia – Ethnic population: 106,000 (2010 census). Turkey – 7,700 (2014 J. Leclerc). Uzbekistan – 992,000 (2010 J. Leclerc); ethnic population: 860,000 (2014 World Factbook). Total users in all countries: 12,771,100.

Location: Dominantly Kazakhstan, further China – Gansu province: Akesai Kazakh autonomous county; Qinghai province: northwest; Xinjiang Uygur Autonomous Region: Yili Kazakh autonomous prefecture, Balikun Kazakh and Mulei Kazakh autonomous counties. Iran – Golestan province: Gorgan city, Caspian Sea area. Mongolia – Bayan-Olgiy and Hovd provinces; far east Čoibalsan area. Turkey – Kayseri province; Manisa province: Salihli district; Istanbul. Uzbekistan – Qoraqalpog'iston Republic; Buxoro, Jizzax, Navoiy, and Sirdaryo regions.

Dialects: Northeastern Kazakh, Southern Kazakh, Western Kazakh.

Writing: Arabic script, Naskh variant, used in China and Iran. Cyrillic script, used in Kazakhstan and Mongolia. Latin script, used in Turkey.

Khakas

Alternate Names: Abakan Tatar, Hakass, Khakhass, Xakas, Yenisei Tatar.

Population: 42,600 (2010 census). Spoken by about 10% of the population of Khakasia (Salminen 2007). 1,500 monolinguals (2002 census). Ethnic population: 73,000 (2010 census). Total users in all countries: 42,610.

Location: Khakasija Republic: north of Altai Mountains; Krasnojarskij Kraj, north; Kemerovskaja Oblast'.

Dialects: Sagai (Sagaj, Saghai), Kyzyl (Khyzyzl, Xyzyl), Koibal (Xoibal), Kamass (Kamassian), Kačin (Kaca, Khaas, Xaas), Šor, Beltir. Kamass dialect is extinct (Salminen 2007).

Writing: Cyrillic script.

Khalaj

Alternate Names: Chaladž, Khalaǰ.

Population: 51,000 (2014 J. Leclerc).

Location: Iran Qom province: northeast of Arak.

Note: Not a dialect of Azerbaijani, as previously supposed. Different from Indo-Iranian Khalaj.

Khorasani Turkish

Alternate Names: Qučani.

Population: 886,000 (2014 J. Leclerc).

Location: Iran – Northeast, Khorasan-e Šemali Province, northwest of Mašhad; Bojnurd area (West Qučani, Qučan area (North or Northeast Qučani, probably largest), Soltanabad area near Sabzevar (South Qučani).

Dialects: West Qučani (Northwest Qučani), North Qučani (Northeast Qučani), South Qučani. Midway linguistically between Azerbaijani and Turkmen, but not a dialect of either. The Oghuz-Uzbek dialect of Uzbek, Northern in Uzbekistan is reportedly a dialect.

Note: Different from Khorasani, a local Persian dialect in Khorasan.

Writing: Arabic script, Nastaliq variant.

Kirgiz

Alternate Names: Kara-Kirgiz, Kirghiz, Kyrgyz, Kyrgyzča. In China Kara, Ke'erkez.

Autonym: кыргыз тили (Kyrgyz tili), кыргызча (Kyrgyzcha).

Population: Kyrgyzstan 4,170,000 (2014); ethnic population: 3,800,000 (2009 census). Afghanistan – 750 (2000), 450 in the Great Pamir; a few in Badakhšan. China – 160,000 (2000 census), 60,000 Northern Kirghiz, 40,000 Southern Kirghiz (Shearer and Sun 2002). Tajikistan – 60,100 (2012 UNSD). Ethnic population: 60,700 (2010 census). Total users in all countries: 4,908,350.

Location: Kyrgyzstan – widespread. Afghanistan – Badakhšan province: Wakhan district, Great Pamir and Little Pamir valleys. China – Xinjiang Uyghur Autonomous Region: Akqi, Akto, Baicheng, Tekes, Wuqia, Wushi, and Zhaosu counties. Tajikistan – Kuhistoni Badakhšon region and Regions of Republican Subordination.

Dialects: Northern Kyrgyz, Southern Kyrgyz.

Writing: Arabic script, Naskh variant, used in China. Cyrillic script, not used in Afghanistan. Latin script, used in Turkey.

Krimčak

Alternate Names: Judeo-Crimean Tatar, Judeo-Crimean Turkish.

Autonym: Кърымчах тыльы (Krymchakh Tilyi).

Population: 1,800 (Salminen 2007). 1,200 ethnic Krimčak in the Crimea, 600 elsewhere (Salminen 2007).

Location: Crimea.

Writing: Cyrillic script. Latin script.

Kumyk

Alternate Names: Kumuk, Kumuklar, Kumyki.

Population: 426,000 (2010 census). Ethnic population: 503,000 (2010 census). Total users in all countries: 427,800.

Location: Dagestan Republic, north and east plain.

Dialects: Khasavyurt, Buinaksk, Khaitag, Podgornij, Terek.

Writing: Arabic script, Naskh variant, used until 1928. Cyrillic script, used since 1937. Latin script, used between 1927–1937 with a resurgence of use in 2015.

Nogai

Alternate Names: Karanogai, Kubanogai, Nogaicy, Nogalar, Nogay, Noghai, Noghay, Noghaylar.

Population: 87,100 (2010 census), decreasing. Ethnic population: 104,000 (2010 census). Total users in all countries: 89,560.

Location: Karačai-Čerkessia Republic; Dagestan Republic, Nogai, Tarumovka, Kizlyar, and Babayurt districts; Čečnja Republic, Šelkovskaja district; Stavropol District, Neftekumsk, Mineral'nye Vody, and Kočubeevskoe counties; northern Caucasus.

Dialects: White Nogai (Kuba), Black Nogai (Kara), Central Nogai.

Writing: Cyrillic script.

Salar

Alternate Names: Sala.

Population: 70,000 (2002). Less than 10,000 monolinguals. Ethnic population: 131,000 (2010 census).

Location: China – Gansu province: Jishishan autonomous county; Qinghai province: Hualong Hui and Xunhua Salar autonomous counties; Xinjiang Uyghur Autonomous Region, Yili, Kazakh autonomous prefecture.

Dialects: Eastern Salar (Gaizi, Gandu, Jishishan, Mengda), Western Salar (Ili). Salar is spoken by descendants of Oghuz Turks from the Samarkand region.

Note: It has an Oghuz (SW) Turkic base, and took on Eastern and South Siberian Turkic features through Central Asian contacts, and finally acquired a stratum of features from Chinese and Tibetan (Dwyer 1998). Gaizi (Jiezi) often seen as standard variety.

Writing: Unwritten.

Sary(g) Yughur

Alternate Names: Sari Yogur, Sarig, Sary-Uighur, Sarygh Uygur, West Yugur, Ya Lu, Yellow Uighur, Yugu, Yuku.

Population: 4,600 (Bradley 2007a). Ethnic population: 7,000 (Bradley 2007b).

Location: China – Gansu province: Sunan Yugur autonomous county near Zhangye (old name Ganzhou).

Šor

Alternate Names: Aba, Kondoma Tatar, Kuznets Tatar, Mras Tatar, Shortsy = Šorcy (pl. in Russian), Tom-Kuznets Tatar

Population: 2,840 (2010 census). 50 monolinguals. Ethnic population: 12,900 (2010 census).

Location: Kemerovskaja Oblast'; scattered throughout Russian Federation.

Dialects: Mrassa (Mrasu), Kondoma. Some sources combine Shor and Čulym.

Writing: Cyrillic script. Altai missionaries developed first alphabet in 1880s. Latin script used from 1930 to 1938.

Note: Different from Šor dialect of Khakas.

Tatar

Alternate Names: Kazan Tatar, Tartar.

Autonym: татар теле (tatar tele), татарча (tatarça).

Population: Russia – 4,280,000 (2010 census); ethnic population: 5,310,000 (2010 census). Kazakhstan – 104,000 (2009 census). Ethnic population: 204,000 (2009 census). Total users in all countries: 5,188,710.

Location: Russia – Tatarstan and Baškortostan republics; Saint Petersburg and Moscow to eastern Siberia.

Dialects: Middle Tatar (Kazan), Western Tatar (Mišer). Tobol-Irtyš is divided into 5: Tjumen, Tobol, Zabolotny, Tevriz, and Tara (Tumaševa). Mixed dialects are: Astraxan, Kasimov, Tepter, and Ural (Poppe). 43,000 Astraxan (first language speakers) have shifted to the Middle dialect. Kasim (5,000 first language speakers) is between Middle and Western Tatar. Tepter (300,000 first language speakers) is reportedly between the Tatar and Baškort languages.

Also used by the Karatai (different from Daghestan Karata), ethnically Erzya people who speak Tatar. Used as second language by Baškort, Eastern Yiddish.

Writing: Cyrillic script. Latin script.

Note: Different from Crimean Tatar (Crimean Turkish) and Siberian Tatar = Baraba.

Teleut

Alternate Names: Northern Altai, Telengit, Telengut

Autonym: Алтай тили (Altai tili)

Population: 57,400 (2010 census). 2,000 Tuba, several thousand Kumandy, 2,000 Čalkan (Salminen 2007). Census includes Southern Altai. Ethnic population: 74,200 (2010 census). Includes Southern Altai.

Location: Altai, Altaiskij Kraj, and Khakasija; Gorno-Altai Ao mountains, along Mongolia and China border.

Dialects: Tuba, Kumandy, Čalkan. No comprehension of Southern Altai. Considered a separate language. Teleut may be a separate language.

Writing: Cyrillic script.

Turkish

Alternate Names: Anatolian, Istanbul Turkish.

Autonym: Türkçe.

Population: 74,250,000 in Turkey, all users. First language users: 73,900,000 (European Commission 2012). Second language users: 350,000 (European Commission 2006). Total users in all countries: 78,907,540 (as L1: 78,527,240; as L2: 380,300). The most recent data by Wikipedia (Sept 2018): 78,5 mill., together with L2 88 mill. <https://en.wikipedia.org/wiki/Turkish_language>.

Location: Dominantly in Turkey and North Cyprus.

Germany 1,490,000 (2015), France 444,000 (2016), Netherlands 391,000 (2017), Northern Cyprus 300,000 (2016), Austria 197,000 (2017), Russia 146,000 (2016), United Kingdom 99,400 (2017), Belgium 89,000 (2016), Switzerland 75,500 (2017), Sweden 45,200 (2017), Denmark 30,000 (2016), Norway 11,300 (2017)

Asia: Azerbaijan 32,100 (2016), Kyrgyzstan 16,200 (2016)

North America: USA 117,000 (2016), Canada 32,800 (2016)

Oceania: Australia 59,600 (2016)

Dialects: Danubian, Eskisehir, Razgrad, Dinler, Rumelian, Karamanli (= Turkish-speaking Greeks), Edirne, Gaziantep, Urfa. Danubian is west; other dialects east.

Writing: Arabic script, Naskh variant, no longer in use. Greek script, no longer in use. Latin script, used since 1928.

Turkmen

Alternate Names: Torkomani, Trukhmen, Trukhmeny, Turkmani, Turkmanian, Turkmenler, Turkomans, Türkmen dili.

Autonym: Türkmençe, түркменче (Türkmençe).

Population: Afghanistan – 1,500,000 (2009); Iran – 1,030,000 (2015 M. Izady); Iraq – 400,000 (2014 J. Leclerc); Syria – 150,000 (2014 J. Leclerc); Turkmenistan 3,820,000 (2015 World Factbook). Total users in all countries: 7,097,970.

Location: Afghanistan – Badghis, Balkh, Faryab, Herat, Jowzjan, and Kondoz provinces; Iran – Golestan, Khorasan-e Razavi, and Khorasan-e Šemali provinces: Turkmenistan border area; Mazandaran province: Gonbad-e Kavus and Pahlavi Dezh; Turkemenistan – widespread.

Dialects: Afghanistan – Ärsare (Arsariy), Shirik, Teke (Taka), Yomut, Bayat, Xatap; Iran – Anauli, Khasarli, Nerezim, Nokhurli (Nohur), Chavdur, Esari (Esary), Goklen (Goklan), Salyr, Saryq, Teke (Tekke), Yomud (Yomut), Trukmen; Turkmenistan – Nokhurli, Anauli, Khasarli, Nerezim, Yomud, Teke (Tekke), Goklen, Salyr, Saryq, Esari, Cawdur.

Writing: Arabic script, Naskh variant, used in Afghanistan and Iran. Cyrillic script, used in Turkmenistan, not used in Afghanistan. Latin script, official usage in Turkmenistan since 1991.

Tuva

Alternate Names: Diba, Kök Mungak, Soyod, Soyon, Soyot, Tannu-Tuva, Tofa, Tokha, Tuba, Tuvan, Tuvia, Tuvin, Tuvinian, Tuwa, Uriankhai, Uriankhai-Monchak, Uryankhai.

Autonym: тыва (tyva), тыва дыл (tyva dyl).

Population: Russia – 254,000 (2010 census); Ethnic population: 268,000 (2010 census). Mongolia – 27,000 (Johnstone 1993). China – 2,400 (1999). Total users in all countries: 283,400.

Location: Russia – Tyva Republic and Krasnojarskij Kraj; southern Siberia near Mongolia border. China – Xinjiang Uyghur Autonomous Region, Altay prefecture, Burjin, Habahe, Fuyun, and Altay counties. Mongolia: Dzavhan province: Dorvoljin district; Hovd province: capital city area; Hovsgol province: north and west enclaves, northwest Tsagaannuur and Ulaan-Uul districts, and 2 areas of east of Hovsgol Nuur; Uvs province: far north Tsagaannuur and Ulaan-Uul districts.

Dialects: Central Tuvin, Western Tuvin, Northeastern Tuvin (Todžin), Southeastern Tuvin, Tuba-Kiži; in Mongolia: Kokčulutan, Khöwsögöl Uigur.

Writing: Cyrillic script.

Urum

Population: Georgia – 90,000 (2015 J. Leclerc); Ukraine – 95,000 (2000). Total users in all countries: 185,000.

Location: Georgia – Šida Kartli region: Gori area; Ukraine – Donets'ka oblast'.

Writing: Cyrillic script; occasionally used. Greek script.

Uyghur

Alternate Names: Uighuir, Uighur, Uiguir, Uigur, Uygur, Weiwu'er, Wiga; in Kazakhstan also Novouygur.

Autonym: تىلىــــى رۇيــغۇئ (Uyghur tili), مەرچۇيــغۇئ (Uyghurche).

Population: China – 10,100,000 (2010 census). Kazakhstan – 191,000 (2009 census); ethnic population: 225,000 (2009 census). Mongolia – 12,000 (2015). Total users in all countries: 10,399,460.

Location: China – Northwest, many separate enclaves in Xizang Uyghur Autonomous Region; also in northernmost Gansu Province, border enclave on Mongolia border; possibly scattered in other Chinese provinces and regions. Mongolia – Govi-Altay province: Altai and Thogta sums.

Dialects: Central Uyghur, Southern Uyghur (Hetian, Hotan), Lopnur (Luobu), Akto Turkmen, Dolan. Central Uyghur comprises the varieties immediately north and south of the Tianshan mountains (Ili (Gulja, Yili, Taranchi), Urumqi (Urumchi), Turfan (Tulufan), Kumul (Hami), Aqsu (Akesu), Qarashahr (Karaxahar), Kucha (Kuqa). Kashghar (Kashi), Yarkand (Shache) and Yengisar (Yengi Hissar) are also generally considered part of Central Uyghur. Southern Uyghur comprises Khotan (Hetian), Keriya (Yutian), and Charchan (Qiemo). Modern standard Uyghur currently encompasses a number of local Turkic varieties whose linguistic affiliations are contested. These include Eynu (Ainu), Aqto Türkmen, Dolan, and Ili Turki (Taranchi). Ainu is a southern Uyghur variety whose lexifier language is partly Persian; it is used as a jargon. Dolan is a slightly Mongol-inflected variety in the Teklimakan desert east of Kashgar. South of Kashgar, in Aqto county, 2,000 residents in the villages of Kösarap and Oytak use a Turkmen-inflected variety dubbed 'Aqto Türkmen' by some. Ili Turki (Taranchi) is indistinguishable from the Central Uyghur spoken in that Ili (Ghulja) area. Minor dialect differences between China, Kazakhstan, Kyrgyzstan, and Uzbekistan, overwhelmingly in loan vocabulary (2015 A. Dwyer).

Writing: Arabic script, Naskh variant, official and primary usage in China, also used in Afghanistan. Cyrillic script, used in Kazakhstan, past usage in China. Latin script, used in China and Turkey.

Uzbek, North

Autonym: o'zbek tili (O'zbek tili), o'zbekcha (O'zbekcha)

Population: 22,200,000 (2015 World Factbook). Ethnic population: 22,900,000 (2014 World Factbook). Total users in all countries: 25,164,820.

Location: dominantly Uzbekistan, further China, Kyrgyzstan, Tajikistan, Turkmenistan.

Dialects: Karluk (Qarlug), Kipčak (Kypčak), Oghuz. Distinct from Southern Uzbek of Afghanistan, Pakistan, and Turkey. Russian influences in grammar, use of loanwords, and script. Oghuz may be a dialect of Khorasani Turkish in Turkey rather than Uzbek.

Writing: Arabic script, Naskh variant, officially abandoned in 1927, used in China. Cyrillic script, officially adopted in 1940. Latin script, officially adopted in 1927 and abandoned in 1940, used in China. Sogdian script, used in China.

Uzbek, South

Alternate Names: O'zbek, Usbeki, Uzbak, Uzbeki

Population: 2,910,000 (2011 UNSD), increasing. 1,000,000 monolinguals. Ethnic population: 2,910,000. Total users in all countries: 4,165,700.

Location: Badghis, Baghlan, Balkh, Faryab, Ghor, Jawzjan, Kunduz, Samangan, and Takhar provinces of Afghanistan; Aqcha, Maimana, Saripul, and Sheberghan towns.

Language Status: Statutory language of provincial identity in Faryab, Jawzjan, Saripul, other northern provinces.

Writing: Arabic script, Naskh variant, used in print. Arabic script, Nastaliq variant, used in handwriting and for book titles.

Yakut

Alternate Names: Sakha, Yakut-Saxa.

Autonym: саха тыла (Saxa tıla), сахалыы (saĥalyy).

Population: 450,000 (2010 census). Ethnic population: 478,000 (2010 census).

Location:

Near Arctic Sea, middle Lena river, Aldan and Kolyma rivers; Saxa (Yakutija), Magadanskaja Oblast', Irkutskaja Oblast', Khabarovskij Kraj, and Krasnojarskij Kraj.

Dialects: Middle Kolymskij, Olemkinskij, Viljiskij, Dolgan.

Note: As second language used by Čukči, Even, Evenki, Northern Yukaghir, Southern Yukaghir.

Writing: Cyrillic script.

2.2. Mongolic languages – survey

Mongolic languages are spoken by *c*. 8 million speakers, living especially in China ('Inner Mongolia'), Mongolia ('Outer Mongolia'), Russian Federation (Burjatija; Kalmykija etc.), Afghanistan. One of them, Kalmyk, is spoken in Europe from the 17th century.

The main source of this demographic survey is the 21st edition of *Ethnologue*[59] from 2018.

Bonan

Alternate Names: Bao'an, Baonan, Boan, Manikacha, Paoan, Paongan

Population: 6,000. Ethnic population: 24,500. Includes 16,500 Jishishan and 8000 Tongren.

Location

China – Gansu province: Linxia Hui autonomous prefecture, Jishishan Bao'an-Dongxiang-Sala autonomous county; Qinghai province: Tongren county.

Note: Speakers of the Jishishan dialect moved from Qinghai Province to Gansu, 1858–1863.

Dialects

Jishishan (Dahejia, Dajiahe, Dakheczjha), Tongren (Tungyen). Jishishan subdialects are Ganhetan and Dadun; Tongren subdialects are Nianduhu, Guomari, Gajiuri, and Lower Bao'an. Jishishan dialect has been influenced by Mandarin Chinese, Tongren by Tibetan.

Writing: Unwritten.

Buryat

Alternate Names: Buriat-Mongolian, Burraad, Northern Mongolian

Population: 329,100 (total)

Location

Russia: Republic of Burjatija, Irkutskaja Oblast', Zabaikalskij; Siberia, east of Lake Baikal. 219,000 (2010 census). Ethnic population: 461,000 (2010 census).

Mongolia: Bulgan, Dornod, Hentiy, Hovsgol, Selenge, and Tov provinces. 45,100 (2010 census).

Dialects:

Ekhirit-Bulagat, Selengin, Unga, Nižne-Udinsk, Barguzin, Tunka, Oka, Alar, Bohaan, Bokhan. Khori is the main dialect in the Russian Federation.

Writing: Cyrillic script.

59 https://www.ethnologue.com/subgroups/mongolic.

Dagur

Alternate Names: Daguor, Dagur, Dawar, Dawo'er, Tahuerh, Tahur

Population: 96,100 (1999 D. Ying), decreasing. 35,000 Buteha dialect, 35,000 Qiqiha'er dialect, 15,500 Haila'er dialect, 4500 Ili dialect. 24,300 monolinguals. Ethnic population: 132,000 (2010 census).

Location

China – Heilongjiang province: Nenjiang prefecture, Fuyu and Nehe counties; Nei Mongol Autonomous Region: Hulun Buir league, Hailar prefecture, Morin Dawa (Molidawa) Daur autonomous banner, Oroqen autonomous banner and Evenki autonomous banner; Qiqihar prefecture, Qiqihar city; northwest Xinjiang Uyghur Autonomous Region: Tacheng prefecture (Ili dialect).

Dialects: Buteha (Aihui, Bataxan, Butah, Darbin, Mergen, Nawen, Nemor), Haila'er (Hailar, Mokertu, Nantun), Qiqiha'er (Fularji, Jiangdong, Jingxi, Qiqihar, Tsitsikhar), Ili.

Note: In Hulun Buir the language is being retained well; in Heilongjiang not transmitted to children among most groups. Also use Evenki, Kazakh, Manchu, Mandarin Chinese, Oroqen, Peripheral Mongolic. Used as the second language Evenki, Oroqen.

Writing: Cyrillic script, 1916–?, 1957–1958. Han script, Simplified variant. Latin script, used from 1920 to some time after 1928, then from 1981. Mongol script, Manchu style, used since the Qing dynasty.

Dongxian

Alternate Names: Tung, Tunghsiang.

Autonym: Santa.

Population: 200,000 (Bradley 2007a). Half in Suonanba dialect. 80,000 monolinguals. Ethnic population: 514,000 (Bradley 2007b).

Location: China – Gansu province: Linxia Hui autonomous prefecture, 7 counties and a city; Xinjiang Uyghur Autonomous Region: Ili Kazak autonomous prefecture, Huocheng and Yining counties.

Dialects: Suonanba (Xiaonan), Wangjiaji, Sijiaji. Some intelligibility with Bonan. Minor dialect differences in pronunciation and borrowed words. Suonanba considered the standard.

Writing: Arabic script, Naskh variant, informal usage. Latin script, experimental.

Kalmyk

Alternate Names: European Oirat, Kalmack, Kalmuck, Kalmuk, Kalmyckij jazyk, Khalli, Oirat, Qalmaq, Volga Oirat, Western Mongolian

Autonym: хальмг.

Population: Total users in all countries: 360,800.

Location: Russia – Kalmykia Republic, Astraxańskaja Oblast', and Stavropol'skij Kraj; Volga-Don steppes northwest of the Caspian, north of the Caucasus. Mostly west Kalmykia (Dörböt dialect); mostly east, lower Volga region, Astraxań province (Torgut dialect). 80,500 (2010 census). Ethnic population: 183,000 (2010 census).

Dialects: Buzawa, Oirat (Oyrat), Torgut (Torghoud, Torghud, Torguud, Torguut), Dörböt (Derbet, Dörbet, Dörböd). Diverged from other Mongolic languages. In the Russian Federation called Kalmyk; in China and Mongolia Oirat. Different from other varieties in China called Oirat, which are sometimes called Asiatic Oirat. In Mongolia, some scholars consider Oirat to be a dialect of Khalkha Mongol.

Writing: Cyrillic script, adopted in 1924, used in Russia and Mongolia. Mongolic script, Todo style, used in China.

Note: The modern literary language is mainly based on the Torgut dialect, though it incorporates a large number of concessions to Dörböt.

Kangjia

Alternate Names: Kangyang Hui

Population: 1,000 (Bradley 2007a). Ethnic population: 2,000 (Bradley 2007b).

Location: China – Qinghai province: Tongren county.

Writing: Unwritten.

Khalkha

Alternate Names: Central Mongolian, Halh, Halha, Kalkh, Khalkha Mongolian, Mongol, Mongolian

Autonym: Монгол хэл

Population: Total users in all countries: 2,626,590 (2012).

Location: Mongolia 2,600,000 (2012), including 32,300 Dariganga, 20,400 Darkhat. Russia: 8,830 (2010 census). Ethnic population in Russia: 11,500 (2000 census).

Dialects: Halh (Khalkha), Dariganga, Khotogoit, Sartul, Tsongol, Darkhat (Darhad, Darkhad).

Writing: Cyrillic script. Mongolian script, used prior to 1941 with a resurgence since the 1990s. In past also Phags-pa script and Tibetan script.

Khamnigan Mongol

Alternate names: Hamunikan, Kamnigan, Xamnigan.

Population: 2,000 (n.d., Wikipedia) or 3,200 (Joshua Project).

Location: China – Chen Baehru Banner of the Hulunbuir League in China's Inner Mongolia.; extinct in Russia and Mongolia.

Moghol

Alternate Names: Mogholi, Mogol, Mogul, Mongul

Population: Around 200 first-language speakers (Janhunen). Ethnic population: 2,000.

Location: Afghanistan – Herat province: Karez-i-Mulla and Kundur.

Dialects: Kundur, Karez-I-Mulla.

Writing: Unwritten.

Monguor

Alternate Names: Mongor, Mongour, Monguor, Qighaan Mongghul, Tu

Population: 152,000 (2000 census). Very few monolinguals. Ethnic population: 190,000.

Location: China – Gansu province; Qinghai province: Hui, Huzhu Tu, and Minhe Tu autonomous counties.

Dialects: Huzhu (Halchighol, Mongghul, Naringhol), Minhe (Mangghuer). Reportedly most divergent of all Mongolian languages. Dialects reported not inherently mutually intelligible. Huzhu: 150,000 people, 50,000 speakers; Minhe: 25,000. Dongren Huzhu considered standard. Dialects of Huzhu: Halchi, Karlong (18,000), and Naringhol.

Writing: Latin script, pinyin-based.

Oirat

Alternate names: Kalmyk-Oirat, Western Mongol.

Population: 150,000

Location: Mongolia – Arhangay, and Bayan-Olgiy, Dzavhan, Hovd, Hovsgol, Govi-Altay, and Uvs provinces.

Dialects: Jakhačin, Bayit, Mingat, Olot (Eleuth, Elyut, Ööld), Khošut (Khošuud), Uriankhai, Khoton (Hoton). *Note:* Khoton (Hoton) were originally of Turkic origin (Kara 1990). Different from Chinese-speaking Qotong (Hoton).

Ordos – see Peripheral Mongol

Peripheral Mongol

Alternate Names: Inner Mongolian, Menggu, Monggol, Mongol, Southern-Eastern Mongolian

Population: 3,380,000 (1982). Population includes 299,000 Čakhar; 317,000 Baarin (Ch. Balin); 1,347,000 Khorčin (Ch. Horchin); 593,000 Kharčin (Harchin); 123,000 Ordos; 34,000 Ejine. 2,500,000 monolinguals.

Location: China – Nei Mongol Autonomous Region; Xinjiang Uyghur Autonomous Region; Gansu, Hebei, Heilongjiang, Jilin, and Liaoning provinces, and Ningxia Hui Autonomous Region, Urumchi to Hailar.
Mongolia – Bayanhongor, Dornod, Dornogovi, Govi-Altay, Omnogovi, and Suhbaatar provinces: except Čojbalsan area in Dornod; south and southeast China border area.

Dialects: Čahar (Čaha'er, Čakhar, Qahar), Ordos (E'erduos), Tumut (Tumet), Šilingol, Ulančab (Mingan, Urat), Jo-Uda (Bairin/Baarin, Balin, Kešikten, Naiman), Jostu (Eastern Tumut, Ke'erqin, Khorčin, Kharačin, Kharčin, Kharčin-Tumut), Jirim (Gorlos, Jalait, Kalaqin, Khorčin), Ejine, Ujumčin.

Writing: Mongolic script. Phags-pa script no longer in use.

Note: Includes China Buriat, Tuva, Kalmyk-Oirat, and speakers of other varieties. In Xinjiang, Torgut, Oold, Korbet, and Hoshut peoples are known as the Four tribes of Oirat.

Šira Yughur
Alternate Names: Eastern Yogor/Yugur, Enge'er, Enger, Shera Yogur, Shira Yoghur, Yellow Uighur, Yogor, Yugar, Yugu, Yögur.

Population: 4,000 (Bradley 2007a). Ethnic population: 6,000 (2000 D. Bradley).

Location: China – Gansu province: east Sunan Yugur autonomous county, Dahe, Kangle, and Mati districts; some in Qinghai province.

Tu – see Monguor.

2.3. Tungusic languages – survey

The smallest group of the Altaic languages is widespread in the Far East in Russia and China. Although their speakers are dispersed through a vast territory, they consist only of 50.000 – 75.000 persons. And the number of speakers with a good knowledge is still lower. Practically all are bilingual, usually in Russian or Chinese. In spite of this rather pessimistic status quo and still worse prognosis the Tungusic people left substantial traces in the history of the Far East. In the 1115–1234 Jurchens subdued Northern China and formed the Jin dynasty. Their descendants, Manchus, formed the last imperial dynasty in China, called Qing (1636/1644–1911). They left such a rich literature that it is not completely catalogued till the present time (Li 2000). However, shortly after their control of China they quickly began to be sinicized. Today the Manchu language is spoken only by old inhabitants of several villages in the Chinese province Heilongjiang. Their number was estimated at 10 in 2015. Thanks to a special protective programme both children and adults learn this language in local schools as a second language. Now it is is known to

several thousand speakers. This is a big difference from the number of the ethnic Manchus, estimated to 10.7 mill[60] in 2000.

The main source of this demographic survey is the 21st edition of *Ethnologue*[61] from 2018.

Even

Alternate Names: Eben, Ewen, Ilqan, Lamut, Orich.

Population: 5,660 (2010 census). Ethnic population: 21,800 (2010 census).

Location: All in Russia – Scattered in Sakha (Yakutiya); Magadanskaja Oblast', Xabarovskij district.

Dialects:

Arman, Indigirka, Kamčatka, Kolyma-Omolon, Oxotsk, Ola, Tompon, Upper Kolyma, Sakkyryr, Lamunkhin. Arman has no remaining speakers. Ola (basis for literary Even) not accepted by dialect speakers.

Language Use

Strongest in Sakha (Beryozovka, Sebyan-Kyuly) and Northern Magadan Oblast (Seymchan). Evens learn the language of ethnicities around them, and switch to that language when a non-Even is present. Few domains. Mainly older adults. Positive attitudes. Also use Koryak, Russian, Yakut. Used as the second language by Čukči, Northern Yukaghir and Southern Yukaghir.

Writing: Cyrillic script, two orthographical standards, limited usage.

Evenki

Alternate Names: (China) Ewenk, Ewenke, Ewenki, Khamnigan, Owenke, Solon, Solong, Sulong, Suolun; (Mongolia) Khamnigan, Solon, Tungus; (Russia) Avanki, Avankil, Čapogir, Ewenki, Khamnigan, Solon, Tungus.

Population: Total number of users in all countries: 16,800.

Location

China: Heilongjiang province: Nale prefecture; a few in Xinjiang Uyghur Autonomous Region; Nei Mongol Autonomous Region: Hulunbuir banners in Arong, Chen Bargu, Ergune East, Ewenki, Huisuomu, Moriadawa, Oronchon. 11,000 (Salminen 2007). Ethnic population: 30,500 (2000 census).

Mongolia: Selenge province. 1,000 (Krauss 1992). Possibly no longer spoken in Mongolia (Bradley 2007a).

60 https://en.wikipedia.org/wiki/Manchu_language
61 https://www.ethnologue.com/subgroups/tungusic

Russia: Siberia, most in Sakha (Yakutiya), and Krasnojarskij Kraj; also in Irkutskaja Oblast', Burjatija, Zabajkalskij & Amurskaja Oblast'; Pacific coast settlements, Magadanskaja Oblast', Čukotskij Avtonomnyj okrug, Xabarovskij Kraj, Kamčatka, and Saxalinskaja Oblast'. 4,800 (2010 census). Ethnic population: 38,400 (2010 census).

Dialects

China: Haila'er, Aoluguya (Olguya), Chenba'erhu (Old Bargu), Morigele (Mergel), Huihe (Hoy). Standard dialect is Huihe. Dialectal differences within Evenki are small and the case for regarding Evenki and Orochen as separate languages is weak (Salminen 2007).

Russia: Manegir, Yerbogocen, Nakanna, Ilimpeya, Tutoncana, Podkamennaja Tunguska, Cemdalsk, Vanavara, Baykit, Poligus, Uchama, Cis-Baikalia, Sym, Tokmo-Upper Lena, Nepa, Lower Nepa Tungir, Kalar, Tokko, Aldan Timpton, Tommot, Jeltulak, Učur, Ayan-Maya, Kur-Urmi, Tuguro-Čumikan, Sakhalin, Zeya-Bureya.

Writing

Cyrillic script, used since 1937. Latin script used in Russia in 1931–1937, limited use in a few publications in China and on internet from 1983.

Manchu

Alternate Names: Man

Population: 20 (Bradley 2007a). Some additional semi-speakers in 3 remote villages (Bradley 2007a). Ethnic population: 10,700,000 (2000 census).

Location: Beijing, Hebei, Jilin, and Liaoning provinces; Heilongjiang province: some villages in Aihui and Fuyu counties; Nei Mongol Autonomous Region: small enclave northeast.

Dialects: Bala, Alechuxa, Jing, Lalin.

Language Use: Long extinct among the mainly urbanized Manchu, but still studied in an ongoing scholarly tradition (Bradley 2007a). Older adults, 50 and older. Positive attitudes. All also use Mandarin Chinese. Used as the second language by speakers of Dagur.

Writing: Mongolian script, Manchu style, used since 1599.

Nanai

Alternate Names: Gold, Goldi, Heche, Hezhe, Hezhen, Nanaj

Population: 1,350 (2010 census). Ethnic population: 12,000 (2010 census). Total users in all countries: 1,390.

Location

Xabarovskij Kraj: extreme far east, confluence of Amur and Ussuri rivers, scattered in Ussuri valley, Sixote-Alin, centered in Amur valley below.

Dialects: Sunggari, Torgon, Kuro-Urmi, Ussuri, Akani, Birar, Kila, Samagir.

Language Use

Severely endangered. Mainly older adults. Mixed attitudes, from negative to mildly positive. Those under 40 consider Nanai unhelpful in life. Older generation pessimistic about possibility of preservation. Some also use Mandarin Chinese, especially elderly. Also use Russian.

Writing: Cyrillic script.

Negidal

Alternate Names: El'kan Beye, Elkembey, Ilkan Beye, Neghidal, Negidaly

Population: 74 (2010 census). Only a few fully fluent (Salminen 2007). Ethnic population: 510 (2010 census).

Location

Khabarovskiy Kray: Kamenka and Im; Paulina Osipenko region, lower reaches of Amur river.

Dialects: Nizovsk, Verxovsk.

Oroč

Alternate Names: Oroči

Population: 8 (2010 census). Ethnic population: 600 (2010 census).

Location: Xabarovskij Kraj: along rivers that empty into Tatar channel; Amur river near Komsomolsk-na-Amure; Vanino region, Datta and Uska-Oročskaja settlements; some among Nanai language speakers.

Dialects: Oričen, Tez (Tazy).

Other Comments

Formerly officially considered part of Udihe.

Orok

Alternate Names: Oroc, Uilta, Ujlta, Ulta

Population: 47 (2010 census). Ethnic population: 300 (2010 census). Total users in all countries: 50.

Location:

Saxalinskaja Oblast': Poronaisk district, Poronaisk town, Gastello and Vaxrušev settlements; Nogliki district, Val village, Nogliki settlement.

Dialects: Poronaisk (Southern Orok), Val-Nogliki (Nogliki-Val, Northern Orok). Formerly officially considered part of Nanai.

Writing: A project to create a literary norm in Cyrillic script and teach the language at elementary schools has recently been launched in cooperation with Japanese scholars (Salminen 2007).

Oroqen

Alternate Names: Elunchun, Olunchun, Orochen, Orochon, Oronchon, Ulunchun

Population: 1,200 (Li and Whaley 2009). 30% of ethnic group (Salminen 2007). Only 12 fluent speakers in 1990, all over 65 yrs (Li and Whaley 2009). 800 monolinguals. Ethnic population: 8,200 (2000 census).

Location

China – Heilongjiang province: Da Hinggan Ling prefecture, Huma and Tahe counties; Heihe prefecture, Xunke county; Yichun prefecture, Jiayin county, Heihe city; Nei Mongol Autonomous Region: Hulun Buir league, Butha and Oroqen banners.

Dialects: Kumarchen, Orochen, Selpechen, Birarchen. Gankui in Inner Mongolia is the standard dialect.

Language Use

Kumarchen dialect has some child speakers; Birarchen is moribund (Salminen 2007). Positive attitudes. Also use Dagur, Evenki, Mandarin Chinese, Peripheral Mongol, Russian. Used as the second language by Dagur and Evenki.

Solon – see Evenki

Ulča

Alternate Names: Hoče, Hol-Čih, Olč, Olča, Olčis, Ulč, Ulči, Ulyč

Population: 150 (2010 census). Ethnic population: 2,770 (2010 census).

Location: Xabarovskij Kraj, Ulč county, Amur river and tributaries, Tatar channel coast; Bulava, Dudi, Kalinovka, Mariinskoe, Nižnaja Gavan, Savinskoe, Mongol, Solontsy, Kolčom, Sofijskoe, Tur, and Uxta; Bogorodskove is capital.

Xibe

Alternate Names: Sibe, Sibin, Sibo, Xibo

Population: 30,000 (2000 A. Jun). Few monolinguals. Ethnic population: 189,000 (2000 census).

Location

Xinjiang Uyghur Autonomous Region: Gongliu, Huocheng, Nilka, Qapqal, Tekes, Xinyuan, and Zhaosu counties; Bortala prefecture, Bole county, Ürümqi city; Ili prefecture, Yining city; Tacheng prefecture, Tacheng county.

Language Use

Vigorous. All domains. All ages in rural areas. Positive attitudes. Also use Kazakh, Mandarin Chinese, Russian, Uyghur.

Writing

Cyrillic script, 1957–1958, experimental, limited use in education. Latin script, used in 1939–1941 and since internet became popular, mainly used on internet and text

messaging, favoured by younger people. Mongolian script, Sibe style, used in 1947–1966 and from 1974, official, primary usage, all domains, favoured by older generations. Mongolian script, Manchu style, used from Qing dynasty to 1947.

Note: Descendants of an 18th century Qing dynasty military garrison. Loans from Uyghur, Kazakh, and Chinese.

2.4. Korean language – survey[62]

The Korean languages is spoken by *c*. 77–78 million speakers especially in the Korean Peninsula, China, Japan and USA.

Alternate Names: South & North Korea: Guk-eo; China Chaoxian, Chaoxianyu, Chaoyu, Hangouyu, Hanguohua, Hanyu; Japan: Zanichi Korean; Russia: Goryeomal, Koryomal.

Autonym: 한국말(Hanguk-mal), 한국어(Hanguk-eo)

Population: South Korea 48,400,000 (2010), North Korea 23,300,000 (2008), China 2,710,000 (2012 census). 1,200,000 monolinguals, Japan 905,000 (2011 census), Uzbekistan 250,000 (2010), Russia 42,400 (2010 census) from the ethnic population 153,000 (2010 census). Further USA 1,120,000 (2016); Canada 153,000 (2017); Australia 79,800 (2016); Brazil 37,000 (2017); New Zealand 26,400 (2016).

Total users in all countries: 77,213,490.

Location: dominantly South Korea, North Korean.

China: Jilin province: Yanbian (Hyanbian) Korean autonomous prefecture; Hebei, Heilongjiang, Liaoning, and Shandong provinces, and Nei Mongol Autonomous Region; some in Beijing municipality, Japan: Kyoto prefecture: Gion area; Osaka prefecture: Imazato-Shinchi and Tsuruhashi; Tokyo prefecture: Mikawashima, Okubo, and Ueno areas; Yamaguchi prefecture: Shimonoseki; mainly urban areas.

Uzbekistan: Toshkent City.

Russia: Khabarovskij kraj, Primorskij kraj, Sakhalin province.

Dialects:

South Korea: Seoul (Kangwondo, Kyonggido), Chungcheongdo (North Chungcheongdo, South Chungcheongdo), Kyongsangdo (North Kyongsangdo, South Kyongsangdo), Jeollado (North Jeollado, South Jeollado), Jeju Island (sometimes recognized as an independent language).

North Korea: Hamgyongdo (North Hamgyongdo, South Hamgyongdo), P'yong'ando (North P'yong'ando, South P'yong'ando), Hwanghaedo.

62 <https://www.ethnologue.com/language/kor>

2.5. Japonic languages – survey[63]

The Japanese language including the Ryukyu dialects are spoken by *c*. 128–129 million speakers.

Autonym: 日本語 *Nihongo*.

Population: Japan 127,000,000 (2010). Total users in all countries: 128,334,210 (as L1: 128,202,710; as L2: 131,500).

USA 449,000 (2016); Brazil 380,000 (2017); Australia 43,700 (2012); Canada 43,600 (2017); Mexico 35,000 (2017); Russia 33,900 (2016); Argentina 32,000 (2017); New Zealand 20,900 (2016).

Survey of the Ryukyuan languages / dialects

Amami-Oshima – Northern

Alternate Names: Northern Amami-Osima, Oosima, Oshima, Osima

Population: 10,000 (2004).

Location: Kagoshima prefecture: north Amami-Oshima and northwest Okinawa islands.

Dialects: Naze, Sani.

Amami-Oshima – Southern

Population: 1,800 (2004).

Location: Kagoshima prefecture: south Amami-Oshima, Kakeroma, north Okinawa, Uke, and Yoro islands.

Kikai

Ethnic population: 13,100.

Location: Kagoshima prefecture: Kikai and northeast Okinawa islands.

Dialects: Onotsu.

Kunigami

Population: 5,000 (2004).

Location: Okinawa prefecture: central and north Okinawa island; Ie-jima, Iheya, Izena, and Sesoko islands.

Dialects: Nago.

63 <https://www.ethnologue.com/subgroups/japonic>

Miyako
Alternate Names: Miyako-Ikema.
Population: Ethnic population: 67,700 (2000).
Location: Okinawa prefecture: south; Ikema, Irabu, Kurima, Minna, Miyako, Ogami, and Tarama islands.
Dialects: Miyako-Jima (Hirara, Ogami), Irabu-Jima, Tarama-Minna.

Oki-No-Erabu
Population: 3,200 (2004).
Location: Kagoshima prefecture: north central Okinawa, Oki-no-erabu island.
Dialects: East Oki-No-Erabu, West Oki-No-Erabu.

Okinawan – Central
Alternate Names: Luchu, Okinawan.
Population: 984,000 (2000). Ethnic population: 1,200,000 (2000 Y. Uemura).
Location: Okinawa prefecture: Aguna Islands, Kerama Islands, Kume-jima, southern Okinawa island, Tonaki, and islands east of Okinawa island.
Dialects: Shuri, Naha, Torishima, Kudaka.

Toku-No-Shima
Population: 5,100 (2004).
Location: Kagoshima prefecture: northern Okinawa, Toku-no-shima islands.
Dialects: Kametsu.

Yaeyama
Alternate Names: Yayeyama.
Population: Ethnic population: 47,600 (2000).
Location: Okinawa prefecture: Aregusuku, Hateruma, Hatoma, Iriomote, Ishigaki, Kohama, Kuroshima, and Taketomi islands.
Dialects: Ishigaki, Kabira, Shiraho, Taketomi, Kohama, Hatoma, Sonai, Kuroshima, Hateruma.

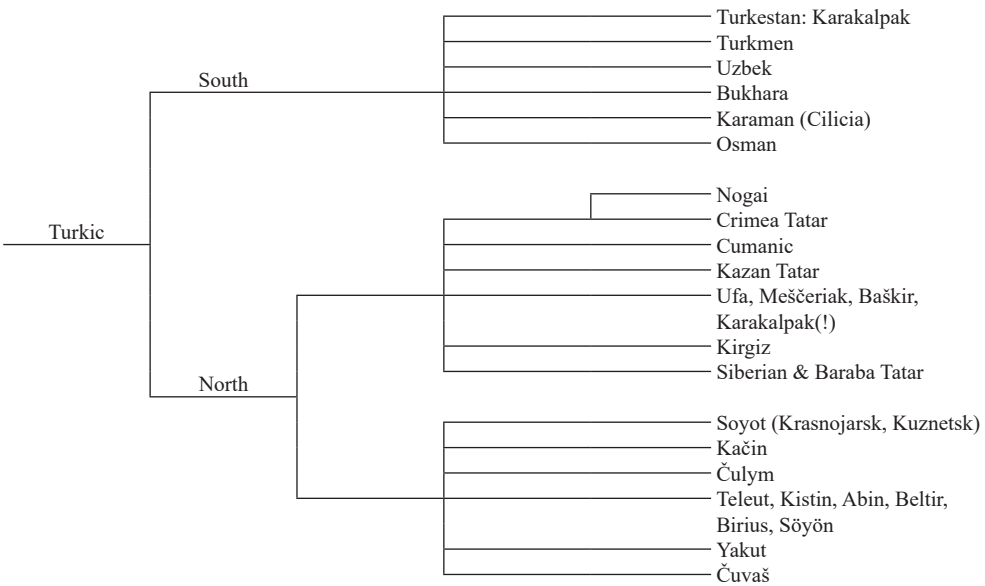
Yonaguni
Population: 800 (2004).
Location: Okinawa: south; Yonaguni island.

Yoron
Population: 950 (2004).
Location: Kagoshima prefecture: north central Okinawa, Yoron islands.

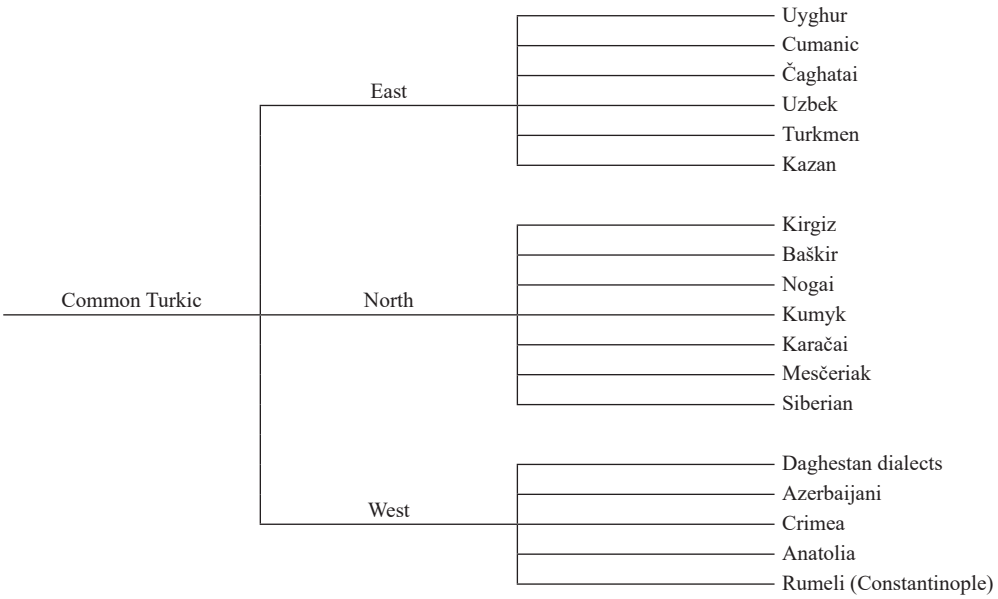
3. Models of classification of the Altaic languages

3.1. Classification of the Turkic languages

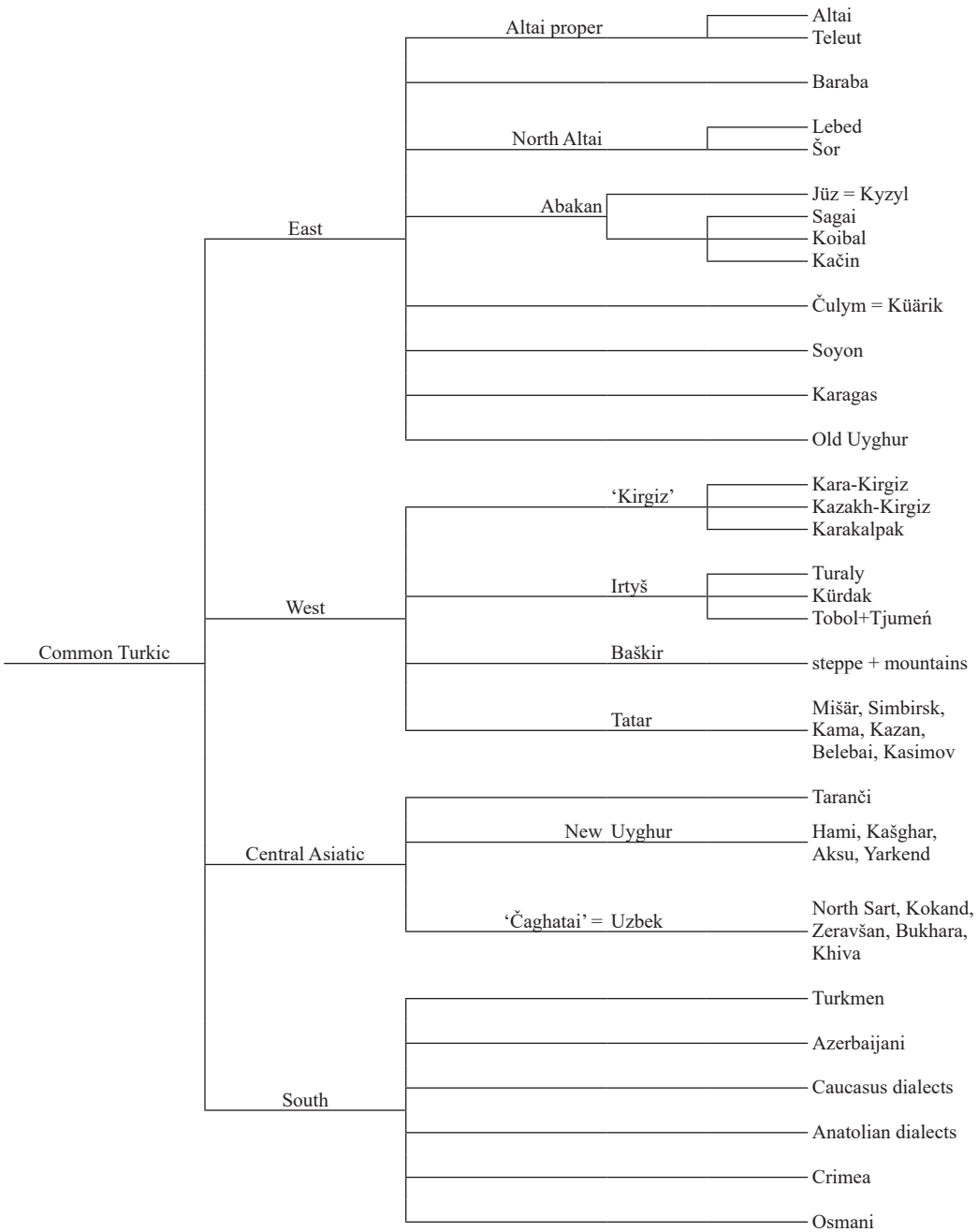
1. Probably the first attempt to classify the Turkic languages belongs to Adelung (1806, 453–496). It reflects especially their geographic distribution:



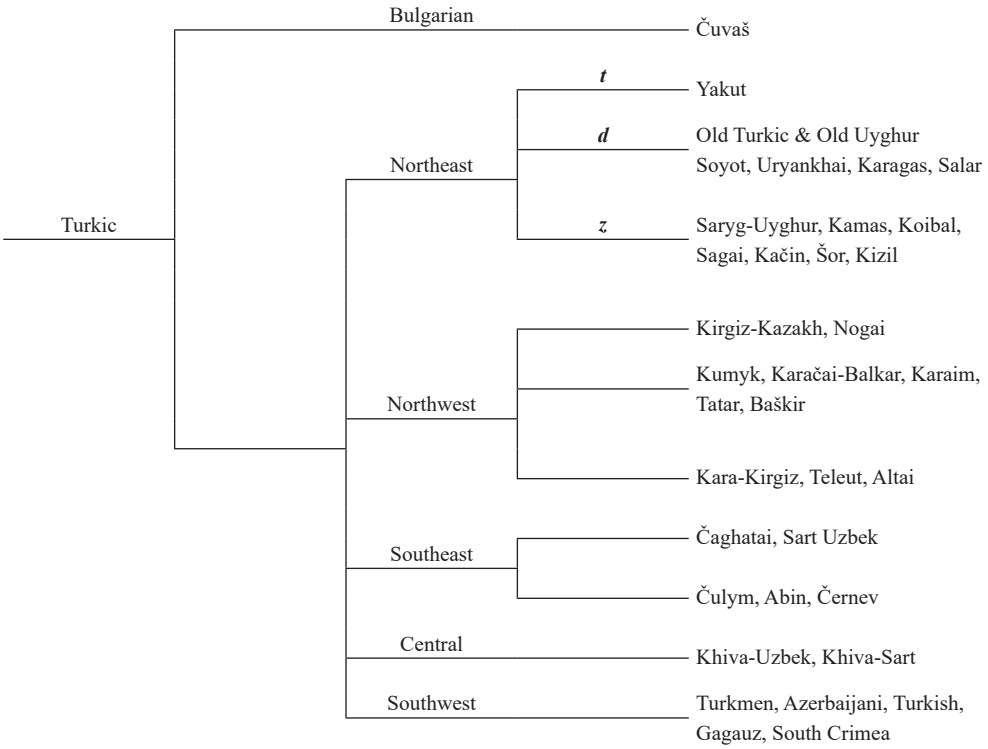
2. Similarly Berezine (1848, 26–27), but without Yakut and Čuvaš:



3. The first attempt of a linguistic classification of the Turkic languages, which was not a simple geographic enumeration, but based on phonetic criteria, may be ascribed to Radloff (1882, 280–291):



4. After discussion of the preceding attempts, Samojlovič (1922, 5–14) presented his own model of classification of the Turkic languages:

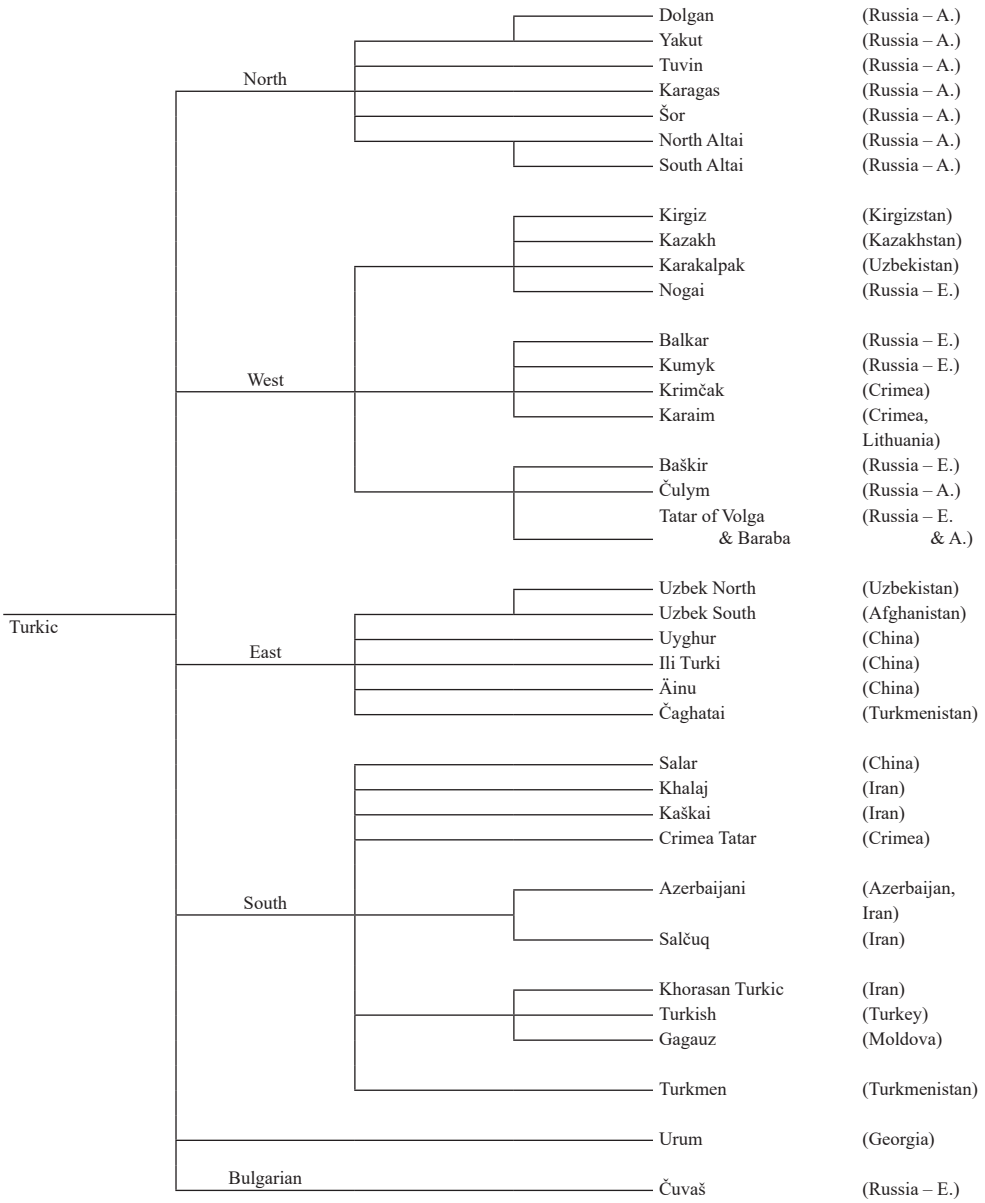


Samojlovič (1922, 15) summarized the phonetic isoglosses serving as the basis of his classification:

Bolgar	Northeast	Northwest	Southeast	Central	Southwest
taxar	*tokuz (dokuz)* „nine“				
ura	*adak*	*ayak* „foot“			
tu	*tag*	*tau*	*tag (dag)* „mountain“		
-ï	*-ïg*	*-ï*	*-ïk (-ïg)*	*-ï*	
julna	*kalgan*				*kalan*
bol (pol, pul) „to be, become“					*ol*

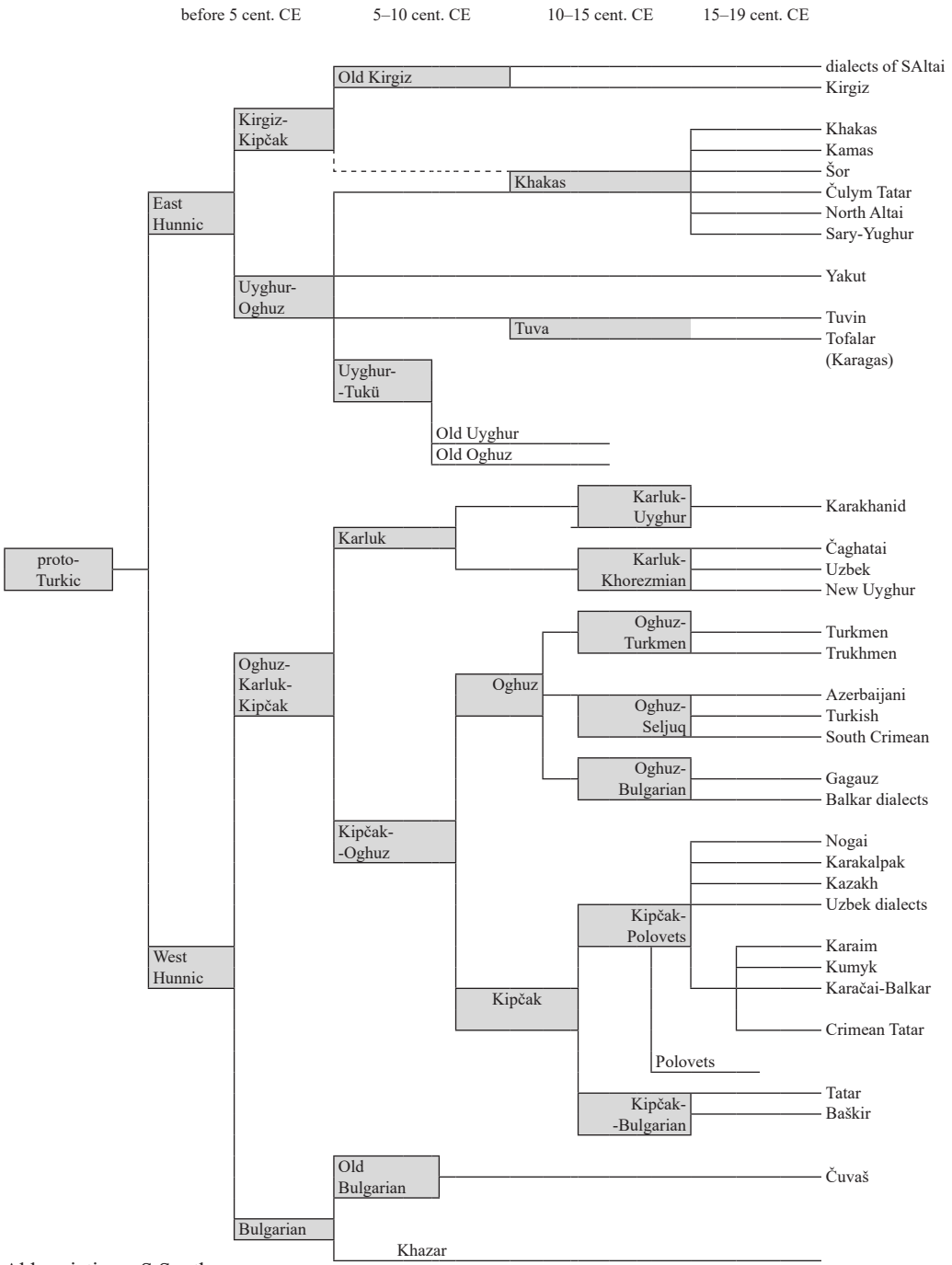
5. Classification of the Turkic language according to ***Ethnologue***$_{21}$ (2018)
<https://www.ethnologue.com/subgroups/turkic>

The frequently quoted monograph *Ethnologue* has been actualized every four years, lately even biennally, and the classification of the Turkic languages (and not only of them) is based especially on geographic and less on genetic criteria and does not reflect their internal hierarchy:



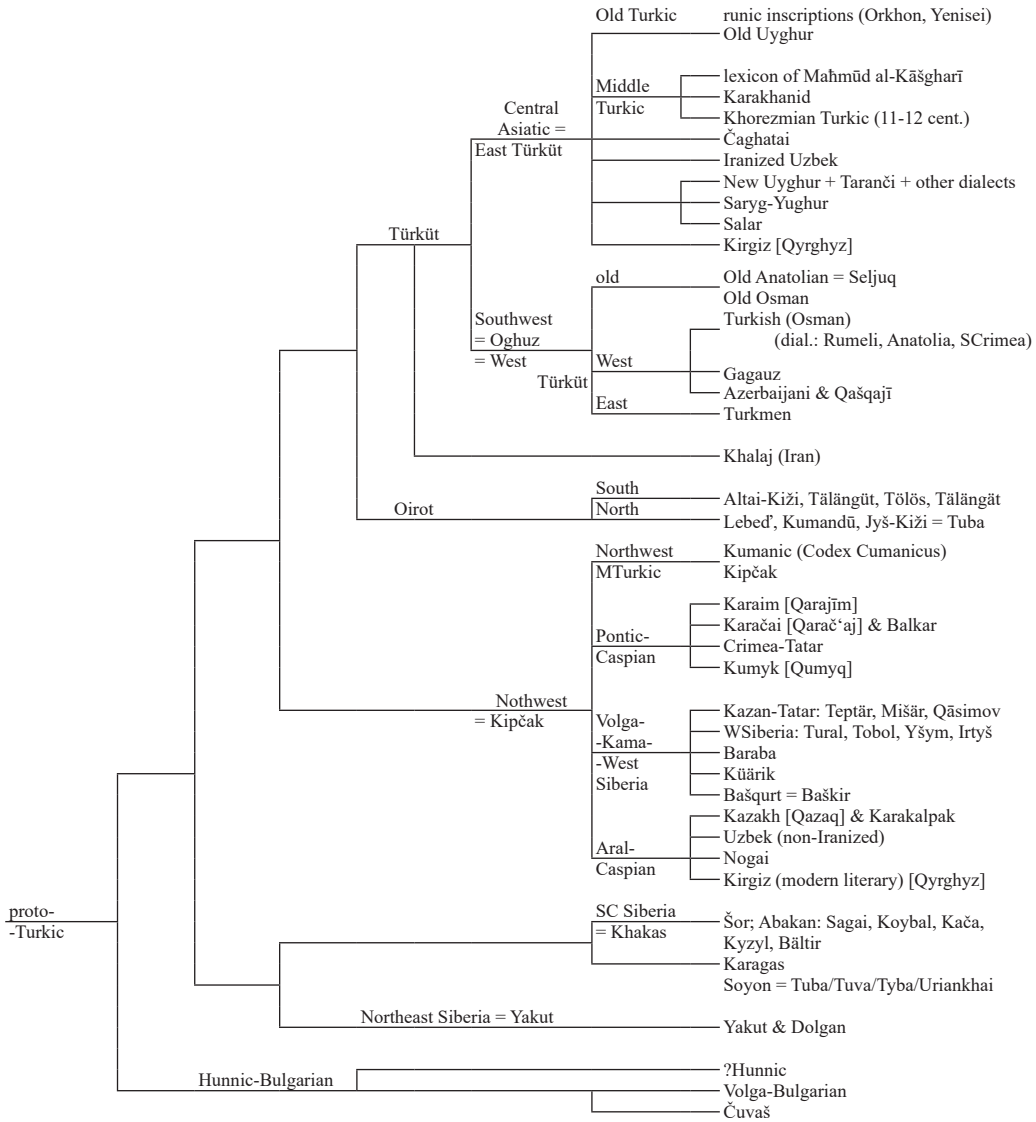
Abbreviations: A. Asia; E. Europe.

6. Baskakov (1960: Appendix 2 between the pp. 228–29; 1981, 18–20) is the author of the classification, which is already classical now:



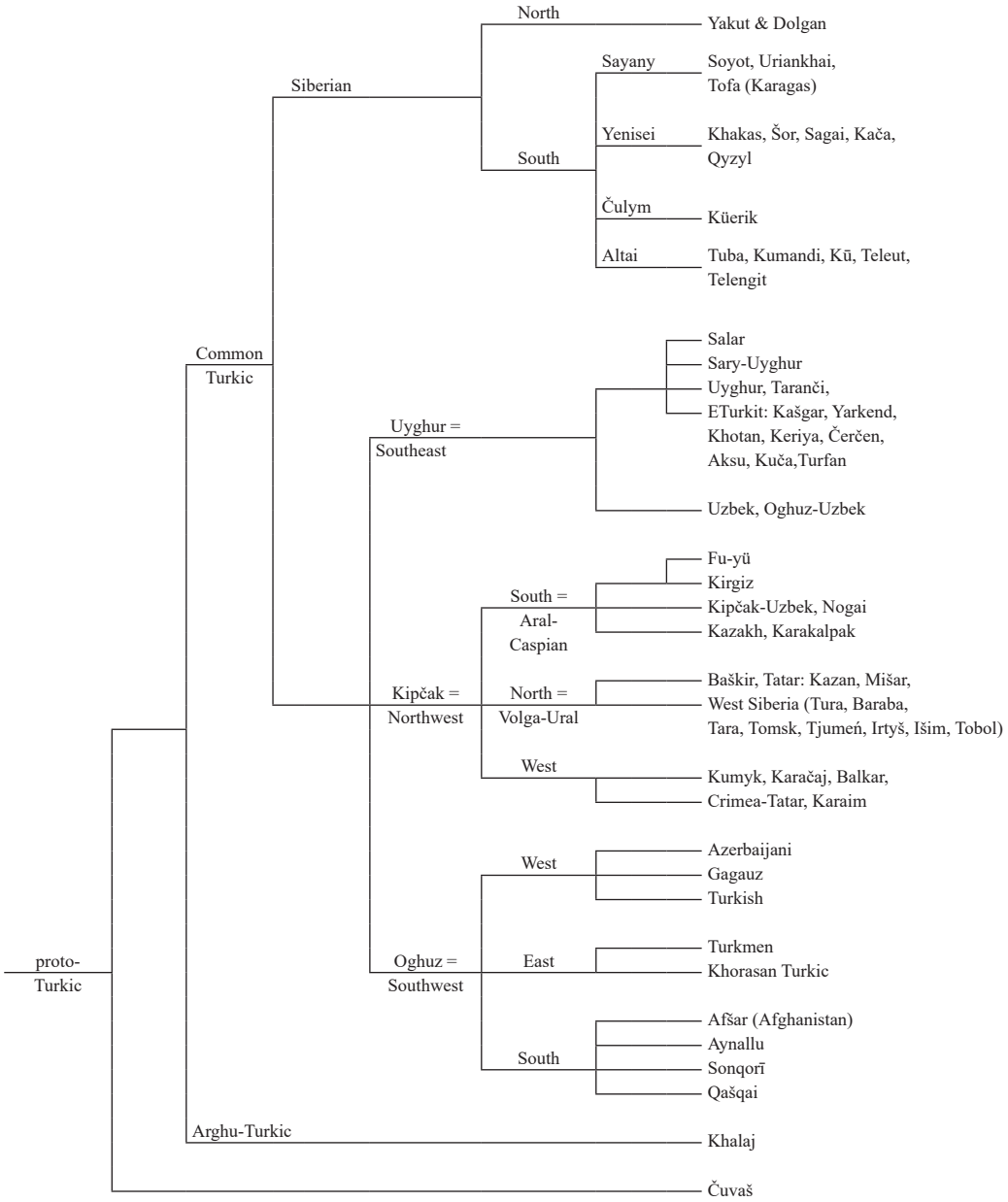
Abbreviations: S South.

7. Menges (1968, 60–61, plus additions to the 2nd edition, pp. xiv-xv) also summarizes the traditional classifications, taking in account the literary sources and minority languages / dialects:

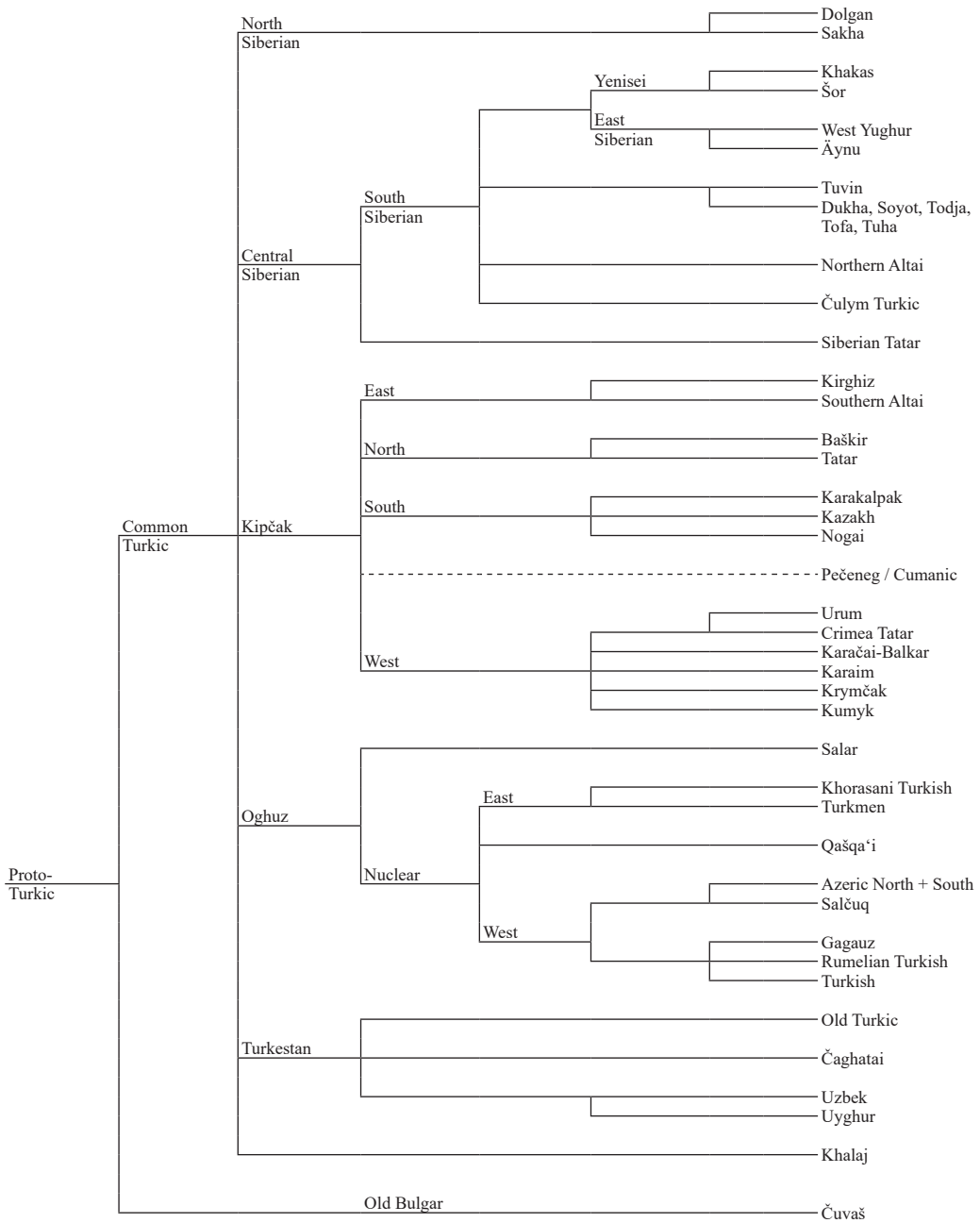


Abbreviations: C Central, M Middle, S South, W West.

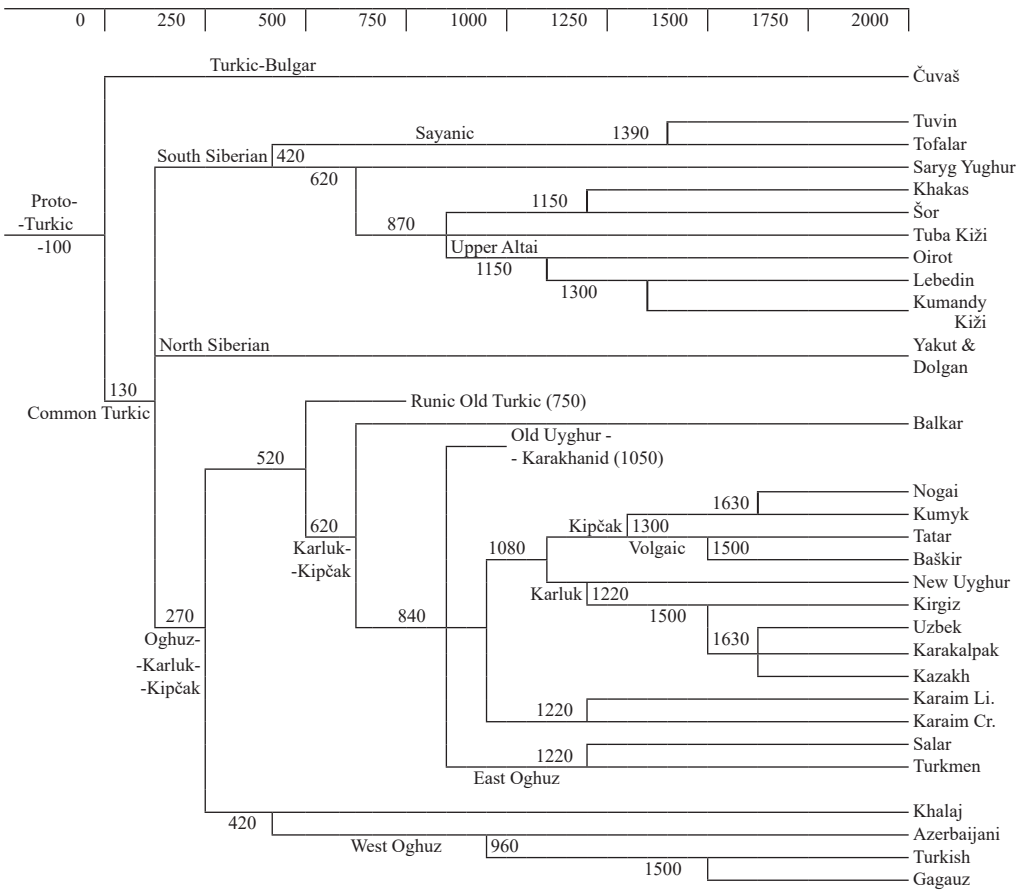
8. Lars Johanson (1998b, 81–83) applies a combination of geographic, genetic and typologic approaches to his version of the Turkic classification:



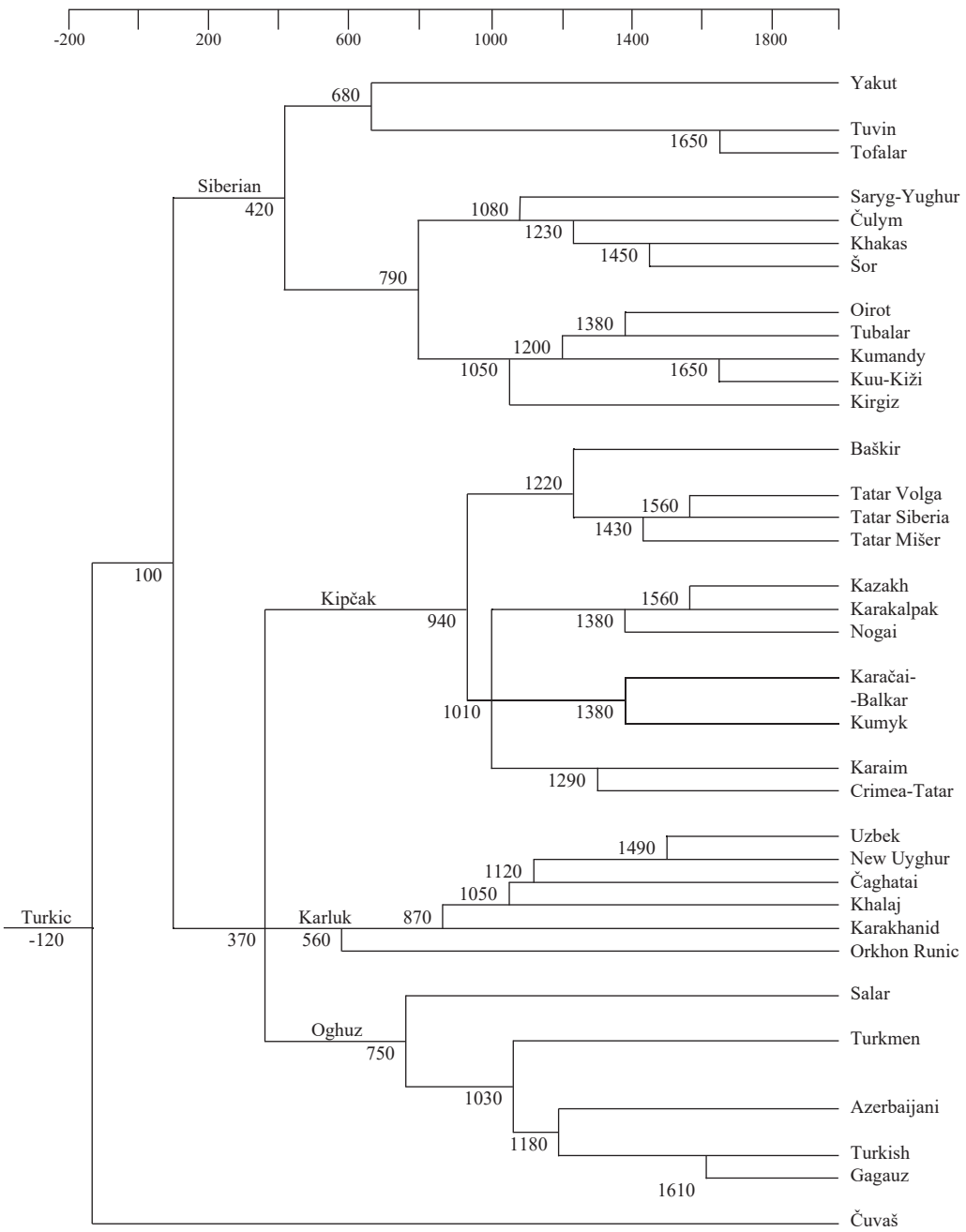
9. A relatively similar model was proposed by Harald Hammarström, Robert Forkel & Martin Haspelmath, eds. (2017). *"Turkic"*. *Glottolog 3.0*. Jena, Germany: Max Planck Institute for the Science of Human History:
https://glottolog.org/resource/languoid/id/bolg1249



10. Anna V. Dybo (2006, 766–817) based her classification on the recalibrated glottochronology developed by Sergei Starostin:



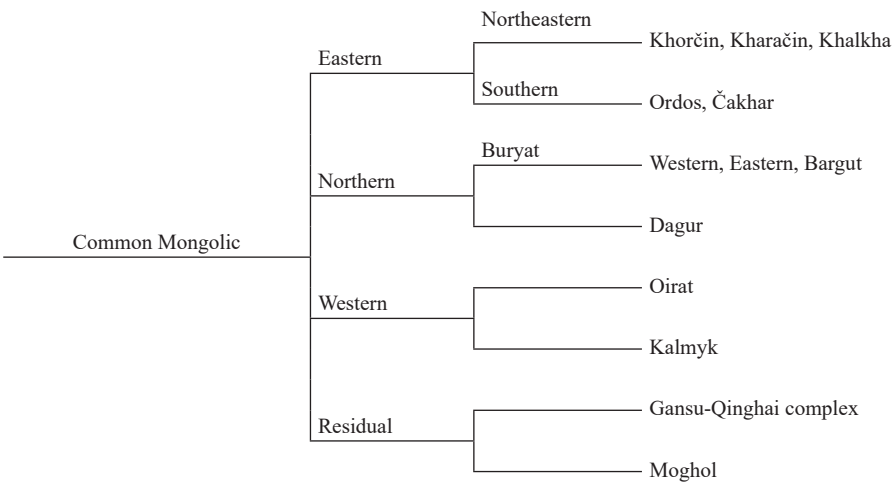
11. Classification of the Turkic languages by Oleg Mudrak (2009, 172–79) is based on statistical evaluation of phonological and morphological isoglosses, projected on a chronological scale:



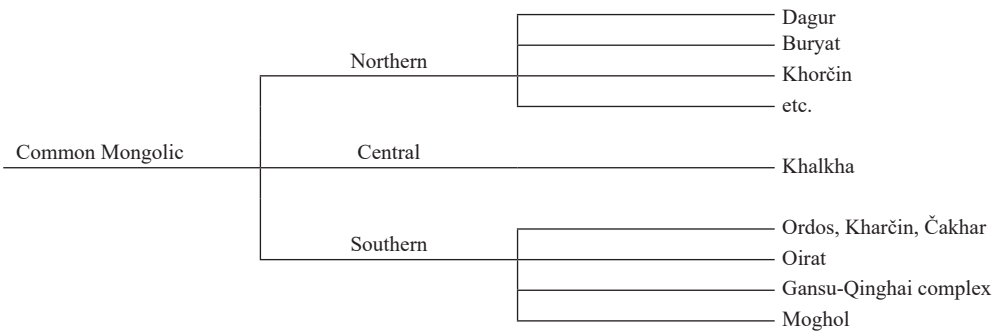
3.2. Classification of the Mongolic languages

The purposes of the present chapter are to summarize the most important models of classification of Mongolic languages with their visualizations in tree-diagrams. From the previous summarizing surveys of classification of the Mongolic languages we find most useful the contribution by Rybatzki (2003b).

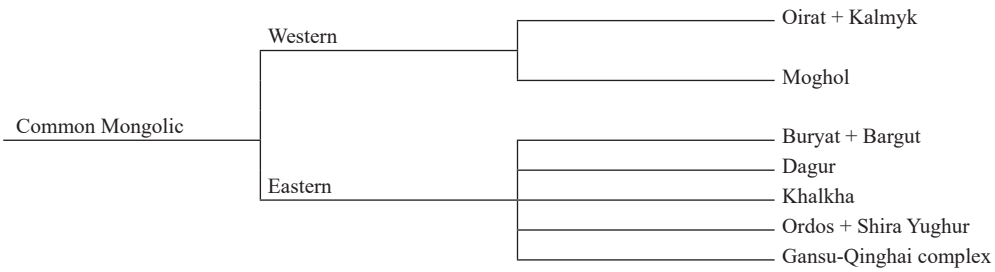
1. The first serious classification of Mongolic languages was proposed by Rudnev (1908):



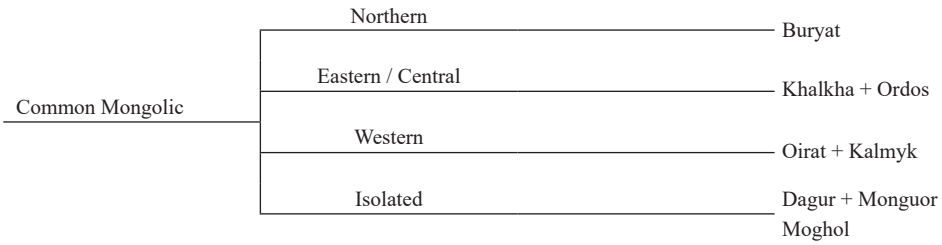
2. Later Rudnev (1911, 231) changed his model as follows:



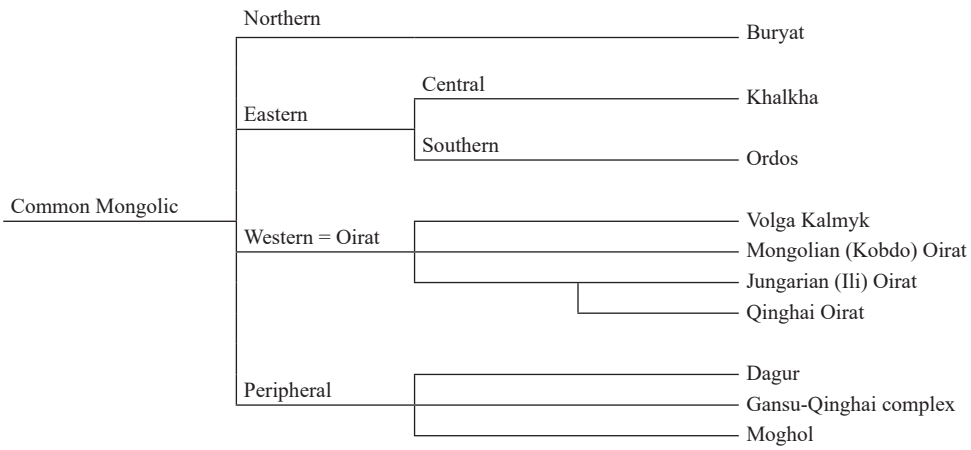
3. Vladimircov (1929, 2–18) divided the Mongolic languages into only two branches:



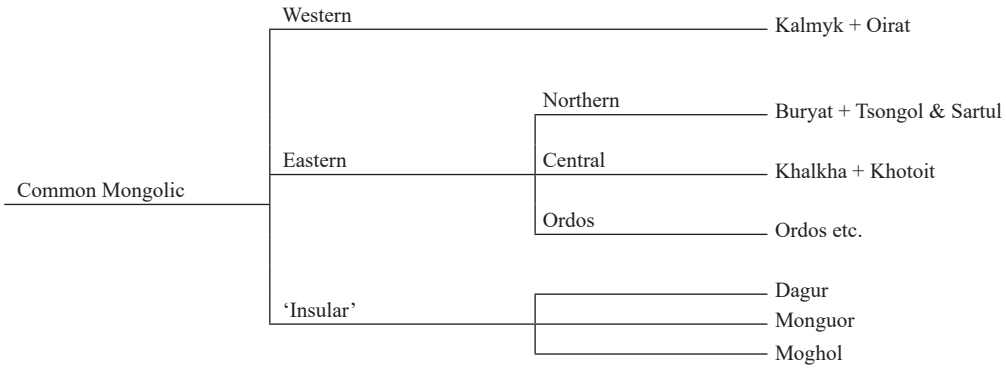
4. Sanžeev (1952, 40) returned to four branches:



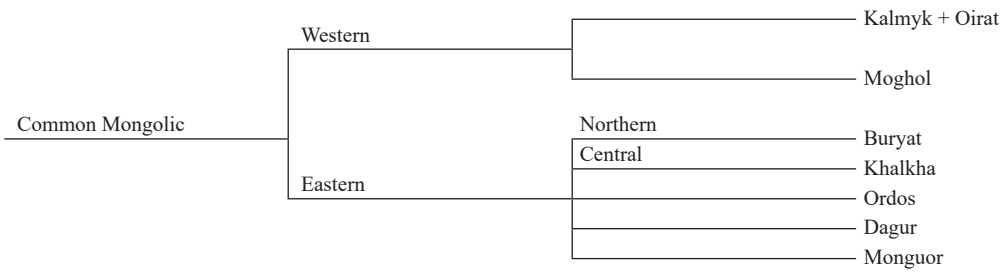
5. Sinor (1952) accepted this tetrachotomic classification; he added some details:



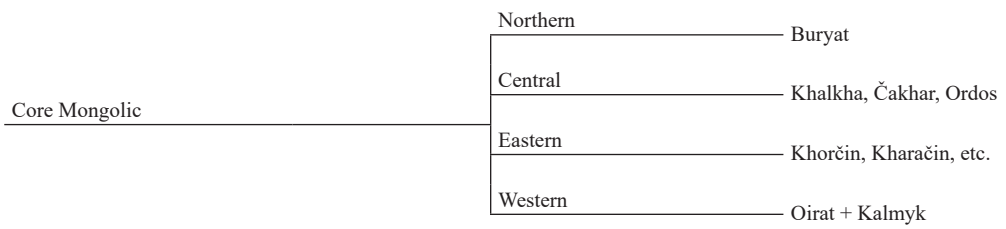
6. Poppe (1954, 6–7) operated with two ‘mainstream’ and one ‘peripheral’ branches:



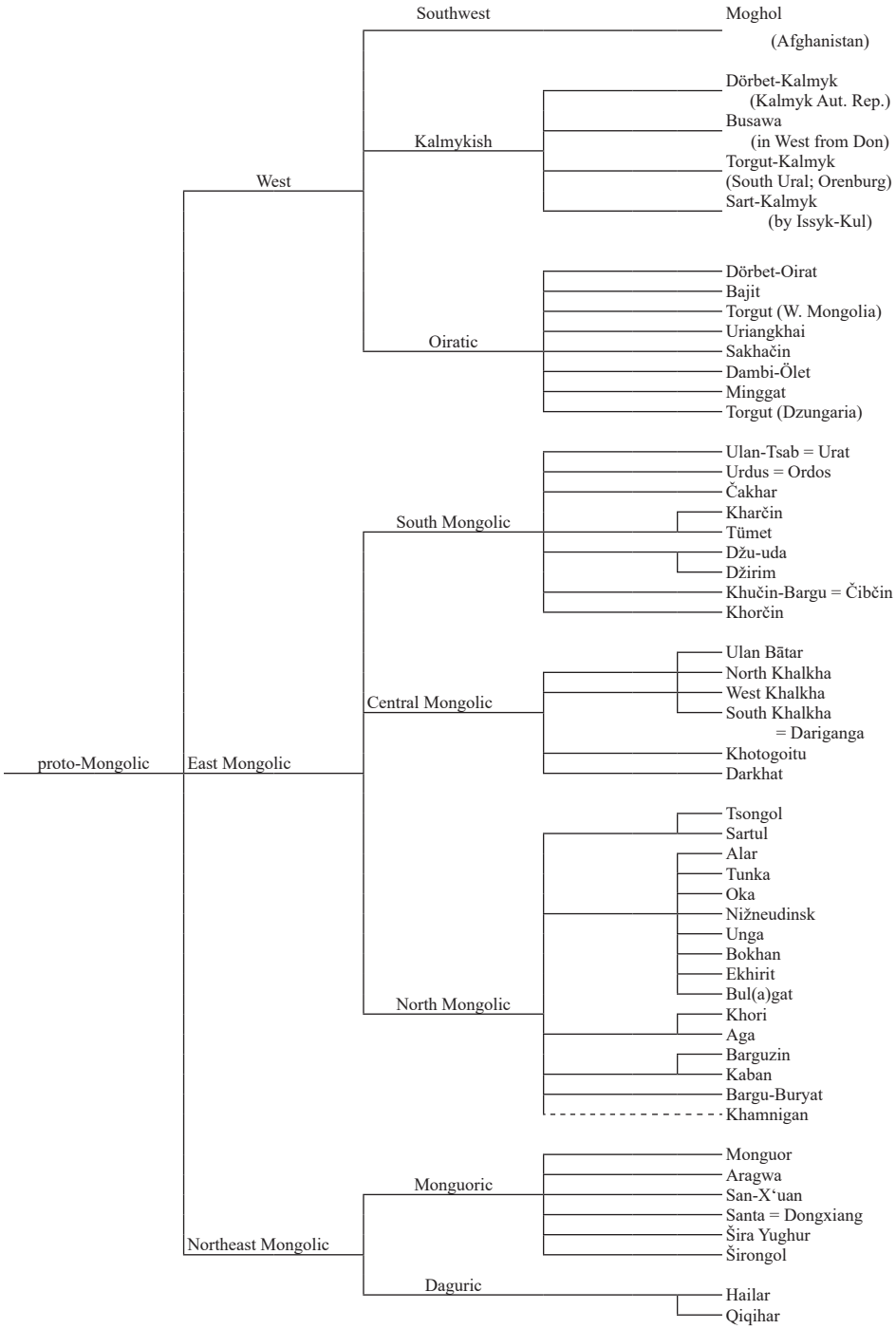
7. Later Poppe (1955, 14–23) reduced his classification into the dichotomic model:



8. Luwsandwan (1959) focused on so-called core Mongolian:

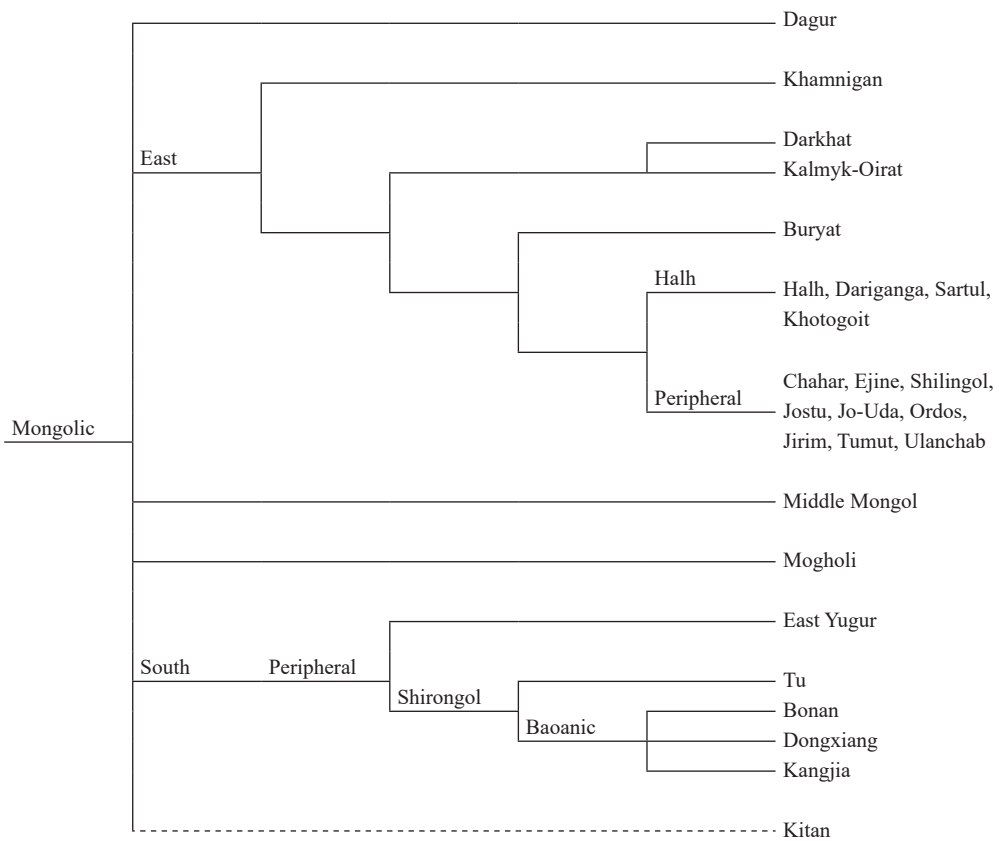


9. The most detailed classification of Mongolian languages was proposed by Doerfer (1964, 41–43).

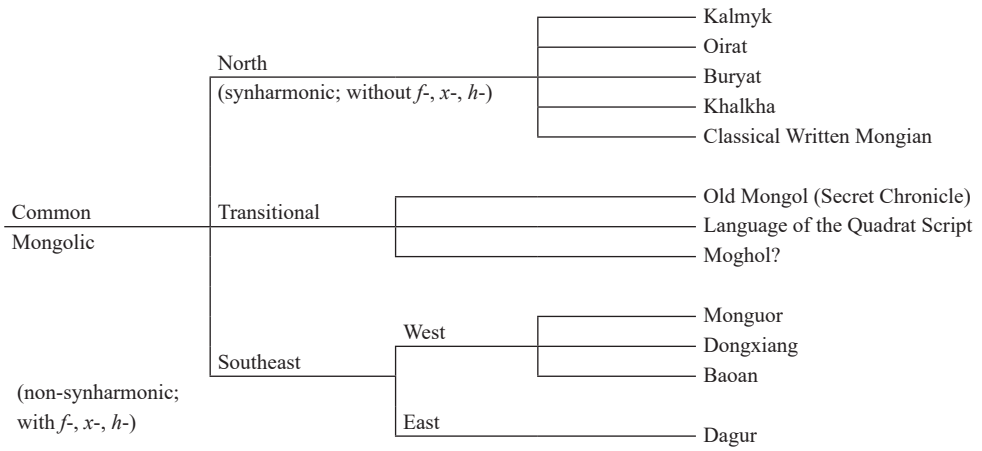


Note: Including numerous dialects, this classification is based especially on geographical principles.

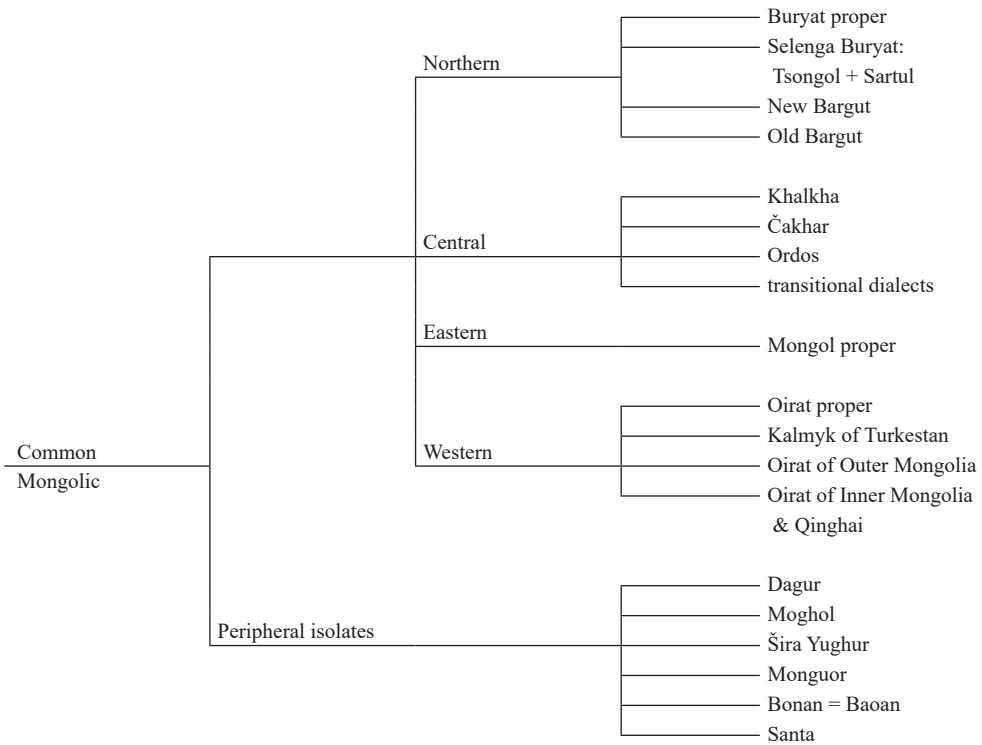
10. Based on similar approaches is the model of classification of Harald Hammarström, Robert Forkel, Martin Haspelmath, eds. (2017). *"Mongolian"*. *Glottolog 3.0*. Jena, Germany: Max Planck Institute for the Science of Human History.
https://glottolog.org/resource/languoid/id/mong1329



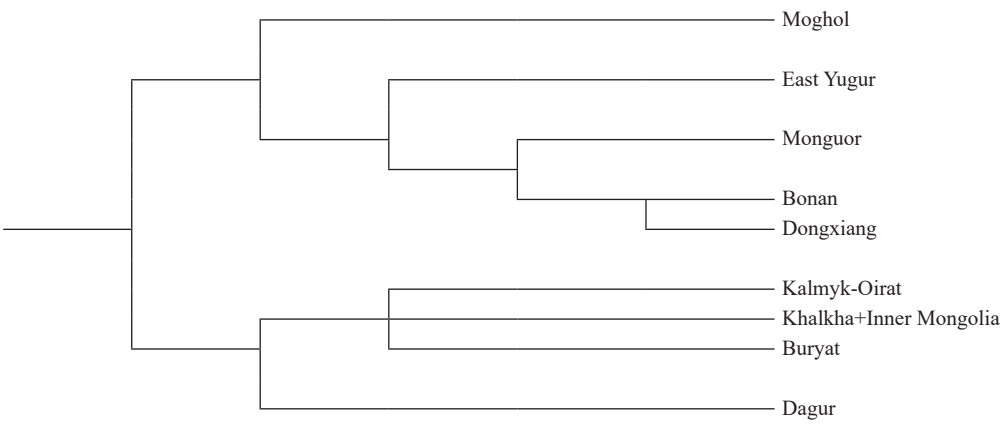
11. Bertagaev (1968, 9–12) differentiated the Mongolic languages according to typological phonetic criteria:



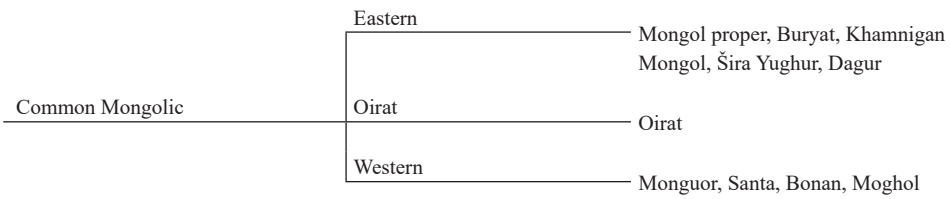
12. The classification of Beffa & Hamayon (1983) is ambitious, but it remains more areal than genetic:



13. Nugteren (1997) proposed a similar model, operating with phonologic and morphologic isoglosses:



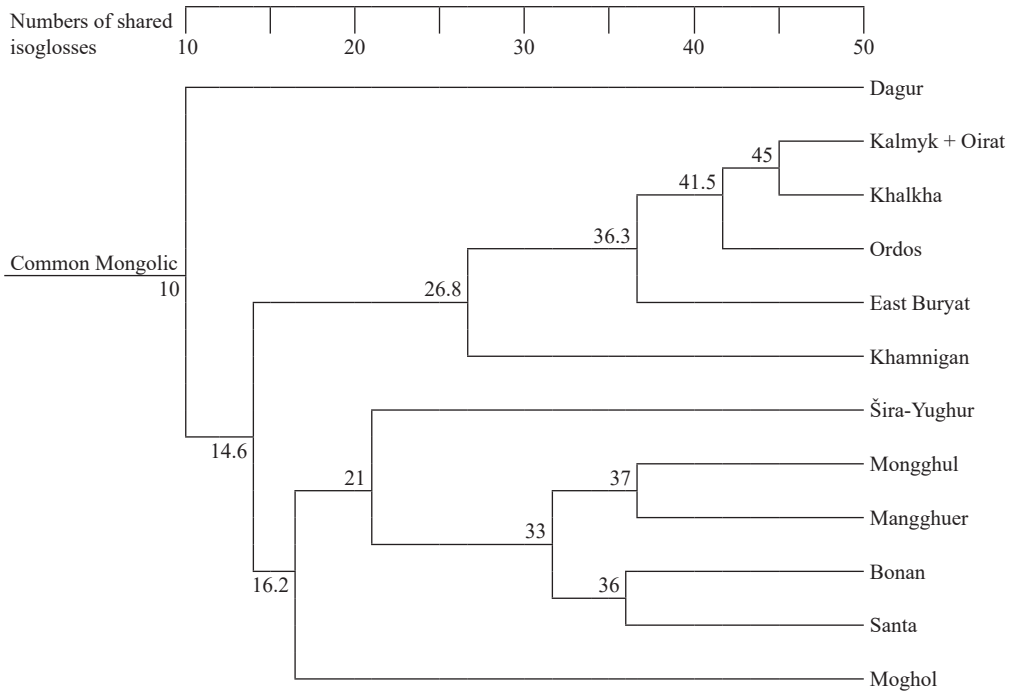
14. Svantesson (2000) returned to the trichotomic model:



15. The preceding classifications are based on combinations of both areal and grammatical, i.e. phonetic & morphological, criteria. But their evaluation was only intuitive or qualitative. The first who introduced the quantitative approach to evaluate the phonetic and morphological isoglosses, is Rybatzki (2003, 387–89). He summarizes the mutual correspondences of the most important grammatical isoglosses between 12 modern languages into the following matrix:

	Khamn.	EBuryat	Khalkha	Ordos	Oirat	Moghol	Š.Yughur	Monggh.	Manggh.	Bonan	Santa
Dagur	12	14	17	11	12	4	6	10	9	9	6
Khamnigan		33	27	24	23	10	12	12	12	11	10
EBuryat			42	32	35	11	17	15	14	13	12
Khalkha				43	45	11	20	18	17	16	13
Ordos					40	10	18	18	15	15	11
Oirat						14	19	17	15	13	12
Moghol							14	15	17	17	18
Sh.Yughur								25	23	20	16
Mongghul									37	34	30
Mangghuer										36	33
Bonan											36

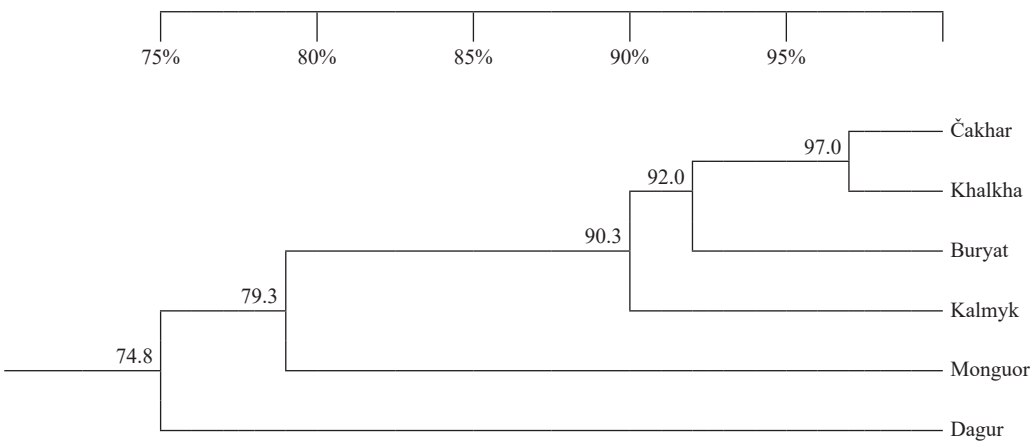
On the basis of these figures it is possible to construct the tree diagram:



16. Hattori (1959; quoted according to Kuz'menkov 1993, 338) was the first one who tried to introduce glottochronology in classification of the Mongolic languages. In his time it was the first version of the method developed by Morris Swadesh, operating with 215 semantic units.

%	Buryat	Khalkha	Čakhar	Monguor	Dagur
Kalmyk	90	92	89	80	76
Buryat		93	91	80	72
Khalkha			97	79	76
Čakhar				78	74
Monguor					76

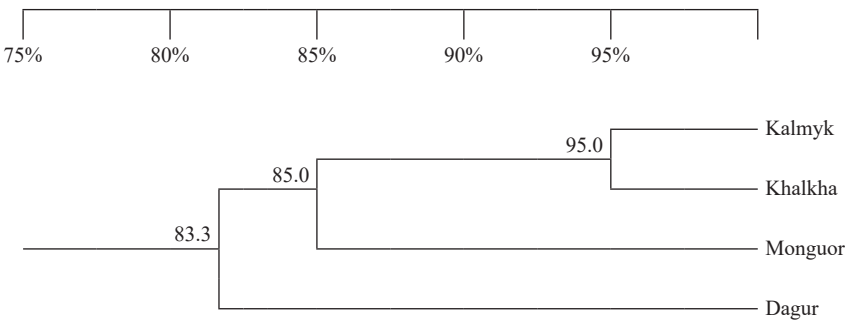
His results may be projected into the following tree-diagram:



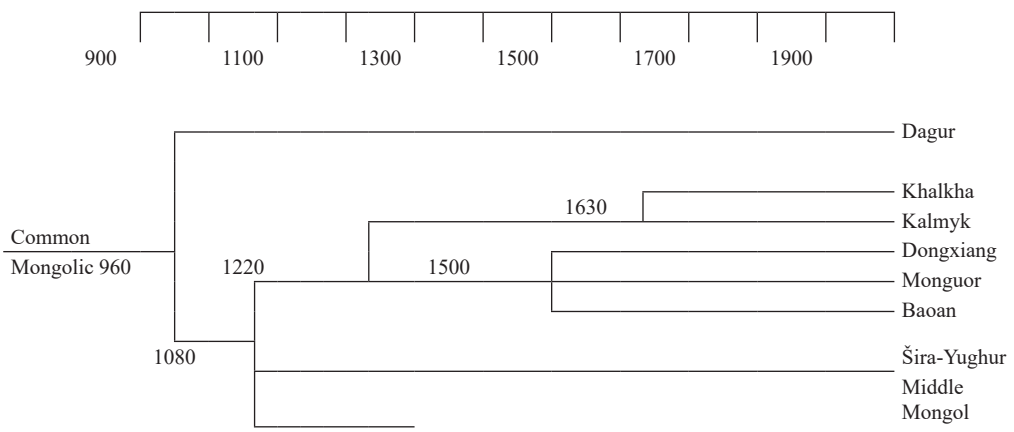
Rather higher figures were obtained by Kuz'menkov (1993, 337):

%	Khalkha	Monguor	Dagur
Kalmyk	95	85	81
Khalkha		85	81
Monguor			85

Although Kuz'menkov compared only four modern Mongolic languages and his percentages are sigificantly higher than Hattori's results, the final diagram reflects in principle the same topology.



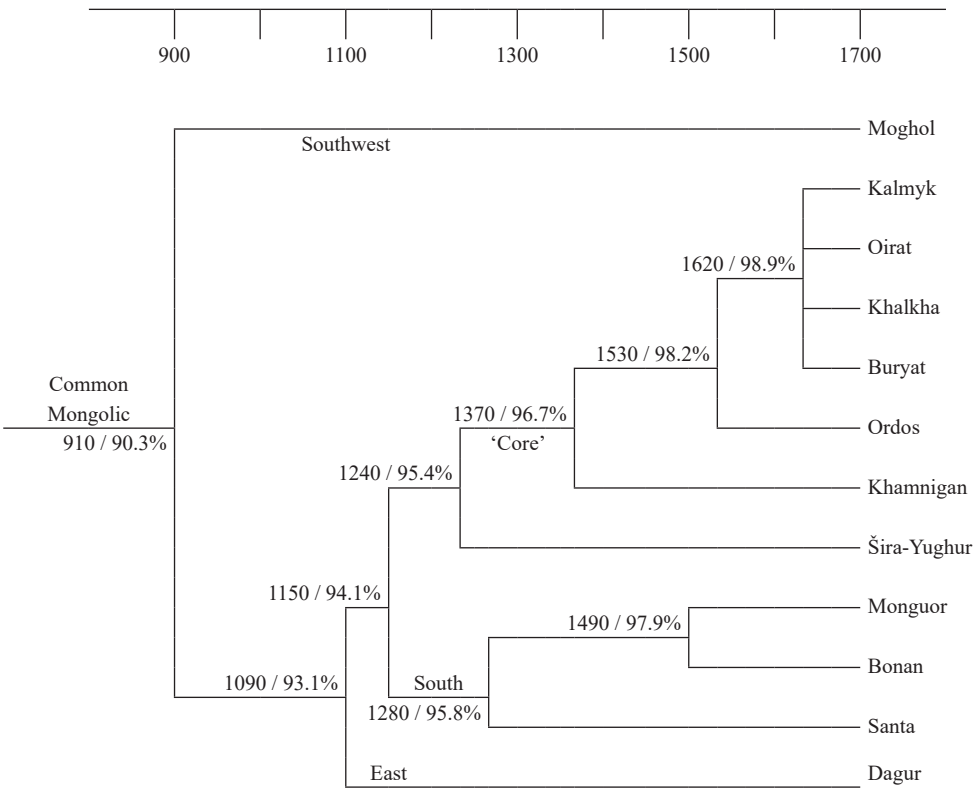
17. The first application of the 'recalibrated' glottochronology to classify the Mongolic languages was prepared by Sergei Starostin himself (1991, 227–244 with lexical data) and finished by his team. It is based on the 8 best documented languages, including Middle Mongol:



18. The classification of Schwarz & Blažek (2010, 2013) operates with the same 7 modern languages with full 100–word-lists, namely Khalkha, Kalmyk, Santa (= Dongxiang), Baoan (= Bonan), Dagur, Šira Yughur, Monguor (at our disposal are also data from two incompletely documented Monguoric dialects, Mongghul [99 words] and Mangghuer [77 words]), plus Buryat also with complete documentation. Incomplete, but useful materials are from Moghol [93 semantic units], Ordos [88], Oirat [81], Khamnigan Mongol [78]. For complete information in the wordlists the lexical data of Middle Mongol and Written Mongol were added.

%	Oirat	Khalkha	Buryat	Ordos	Khamn.	Santa	Baoan	Dagur	Yughur	Mon-guor	Moghol
Kalmyk	98.76	99.00	99.00	97.72	96.15	94.79	96.35	94.50	95.95	97.44	90.78
Oirat		100.00!	98.76	97.36	89.85!	93.75	94.30	94.44	95.00	96.87	88.97
Khalkha			99.00	98.86	96.15	94.79	96.87	95.00	95.95	95.91	90.00
Buryat				98.86	97.43	95.31	94.27	93.00	94.94	95.91	90.78
Ordos					97.29	93.10	95.93	95.45	95.45	95.97	91.66
Khamn.						92.30	94.73	89.74	94.87	93.50	90.62
Santa							96.84	91.14	90.00	94.79	90.14
Baoan								94.27	93.68	97.91	92.56
Dagur									89.39	94.38	88.66
Yughur										95.36	88.81
Mon-guor											94.00!

Note: The symbol "!" indicates rather deviant figures, apparently influenced by defective, i.e. missing or borrowed, lexical data. For this reason they were not taken into account in the final calculation.

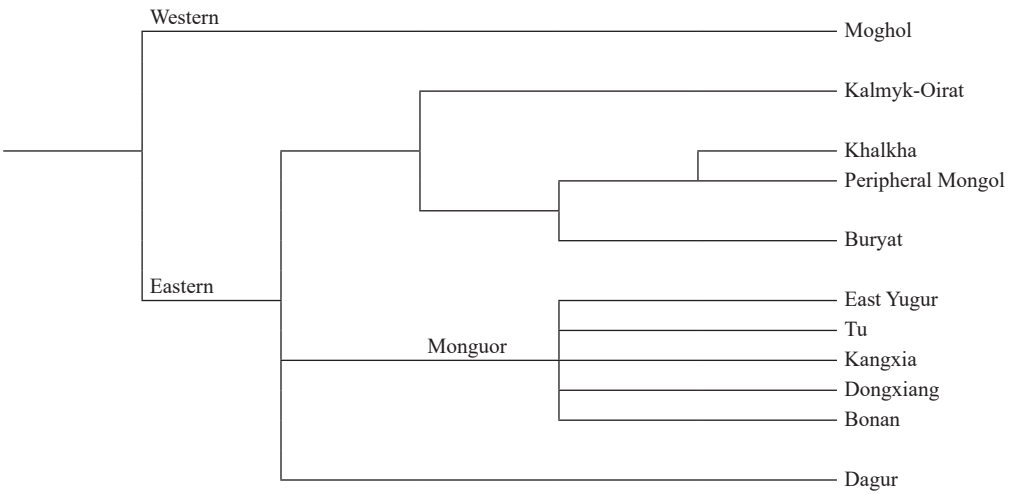


Comments

The results confirm a narrow closeness of Khalkha, Buryat, Oirat, Kalmyk and Ordos, whose literary forms depend on the lexicon of Written Mongolian. Khamnigan probably belonged to the same, 'Core Mongolian', cluster, but without any conservation in a literary variety its difference from other 'core' languages vacillates around 3%, in contrary to 2% for the preceding five idioms. The preceding classifications based on the quantitative approach (## 15, 17) are in agreement with our results, connecting Monguor, Bonan and Santa in the second cluster. All three of these models also agree in the conclusion that Dagur separated before a divergence of the 'core' and south clusters. On the other hand, we differ in the position of Šira-Yughur and Moghol. We find the closest relative of Šira-Yughur in the 'core' cluster, Rybatzki (2003) connects it together with the south cluster, while Starostin (1991) proposed for it an independent position outside both clusters. The position of the most deviant language is occupied by Moghol in our model, while Rybatzki classifies Moghol together with the south cluster, plus Šira-Yughur. Using his method, the place of the most deviant language is occupied by Dagur. Starostin did not test Moghol at all. Summing up, these three models differ only in the positions of Šira-Yughur and Moghol. The uncertain classification of Moghol is understandable, since it

is the language with the highest number of loans (18), plus 7 missing items in the testing list. In any case, it is a relatively high correlation, taking in account the differences in approach, especially between the quantitative evaluation of the phonetic and morphological isoglosses calculated by Rybatzki and lexical isoglosses applied by Starostin and us.

19. In principle similar topology (with exception of the position of East Yugur) is presented in the most recent edition of *Ethnologue* (2018):



<https://www.ethnologue.com/subgroups/mongolic>

20. The most ambitious model of classification of the Mongolic languages was presented by Gruntov & Mazo (2015). They have collected lexical data, namely 110 lexical units, from 18 living languages or dialects, plus three varieties of Middle Mongol.

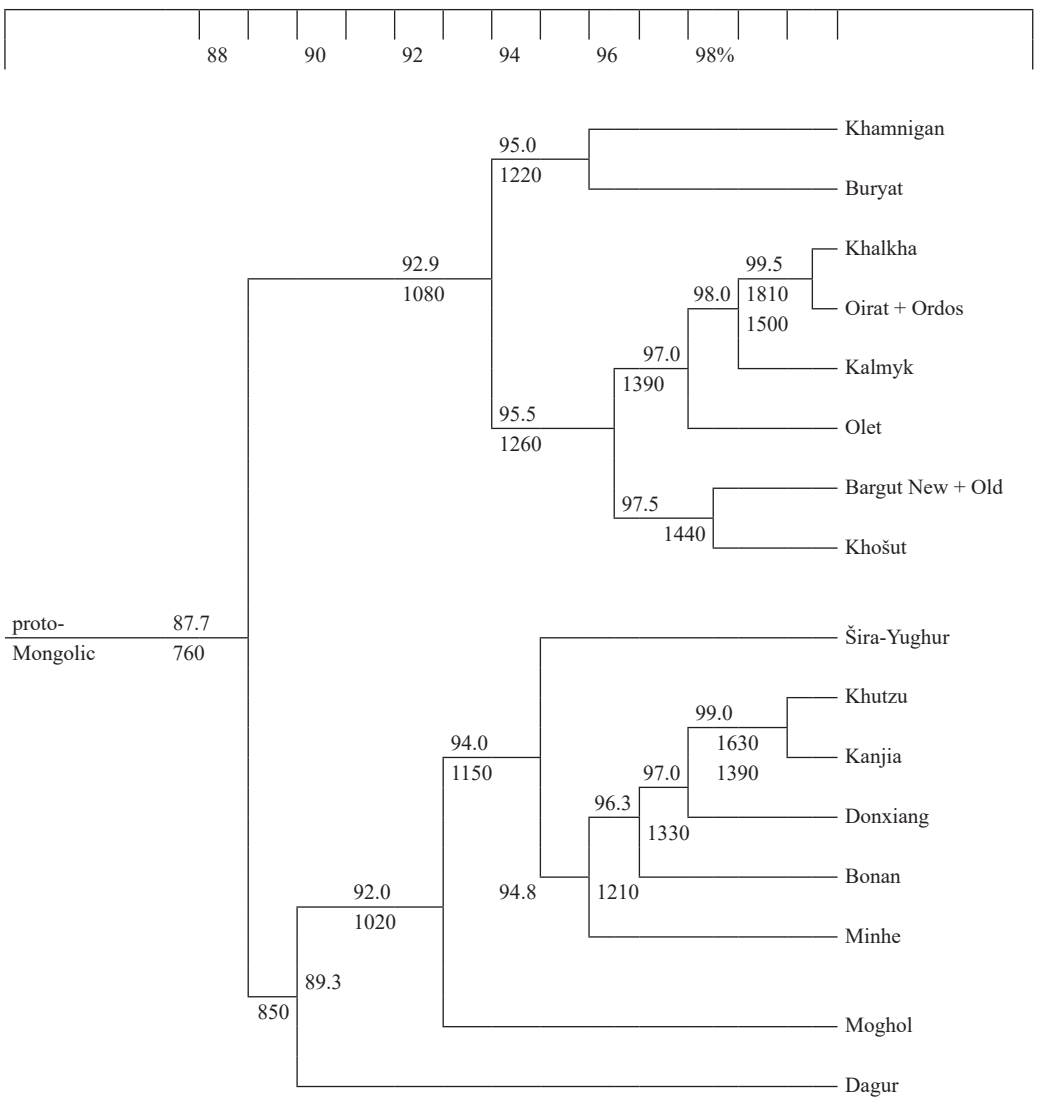
%	SH	HY	Mg	Dg	Khl	Ord	Bur	Khm	NBg	OBg	Olt	Klm	Oir	Khš	ŠY	Don	Bon	Mnh	Khu	Kan
MA	100	99	95	92	91	92	88	85	88	91	87	90	90	91	93	96	95	94	95	94
SH		98	94	91	93	94	88	82	90	91	90	92	92	92	95	96	98	92	97	95
HY			95	93	94	94	89	85	89	92	88	92	92	92	96	96	98	92	96	97
Mg				88	89	90	86	83	85	89	86	87	87	89	90	94	91	92	94	91
Dg					88	87	84	81	83	87	82	86	85	88	90	89	90	86	91	90
Khl						98	96	93	96	96	98	96	99	96	93	88	88	88	90	88
Ord							95	92	96	95	96	98	100	97	94	89	88	88	90	89
Bur								95	94	95	94	92	95	93	91	85	85	86	88	84
Khm									93	94	89	88	91	93	90	84	83	81	85	82
NBg										100	93	94	96	97	94	88	85	85	90	84
OBg											92	94	96	98	96	90	88	88	92	88
Olt												96	98	95	93	87	84	84	87	84
Klm													100	98	94	87	86	86	90	88
Oir														98	94	87	88	87	89	87
Khš															97	91	89	89	92	89
ŠY																95	93	94	96	92
Don																	96	93	96	98
Bon																		93	96	97
Mnh																			98	95
Khu																				99

They do not try to construct any tree-diagram and present their results as follows:

1. северно-монгольские
1.1.1 хамниганский
1.1.2 бурятский
1.2.1 новобаргутский и старобаргутский
1.2.2 халха
1.2.3 олетский
1.2.4.1 ордосский
1.2.4.2 ойратский и калмыцкий
1.2.5 хошутский
2. дагурский
3. ‘архаичные’ языки
3.1. языки среднемонгольских памятников (ССМ, МА, ХЮ)
3.2 могольский
3.4 баоаньская подгруппа
3.4.1. баоаньский
3.4.2 дунсянский
3.4.3 шира-югурский

3.4.4.1 минхэ
3.4.4.1.1 хуцзу
3.4.4.1.2 канцзя

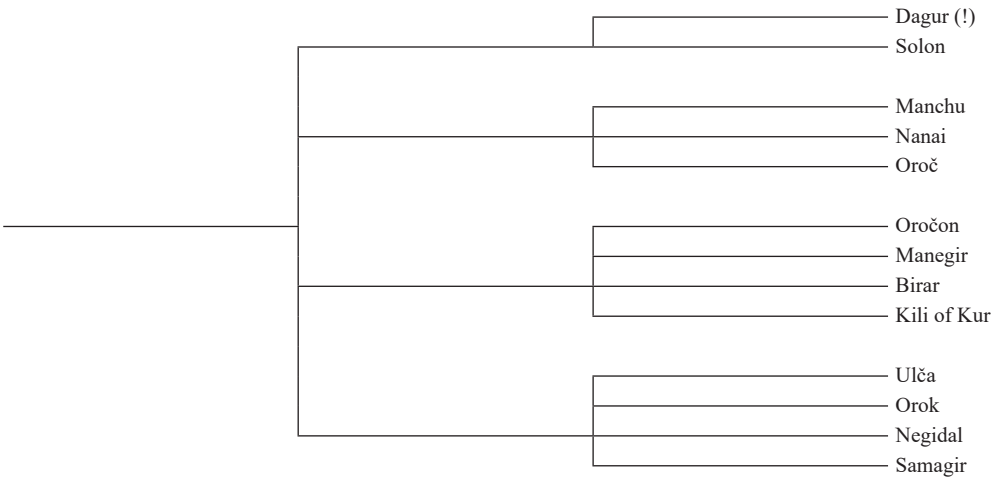
But the results of Gruntov & Mazo are so rich and valuable that they deserve a deeper analysis, beginning of the standard cladistic procedure leading to construction of the tree-diagram:



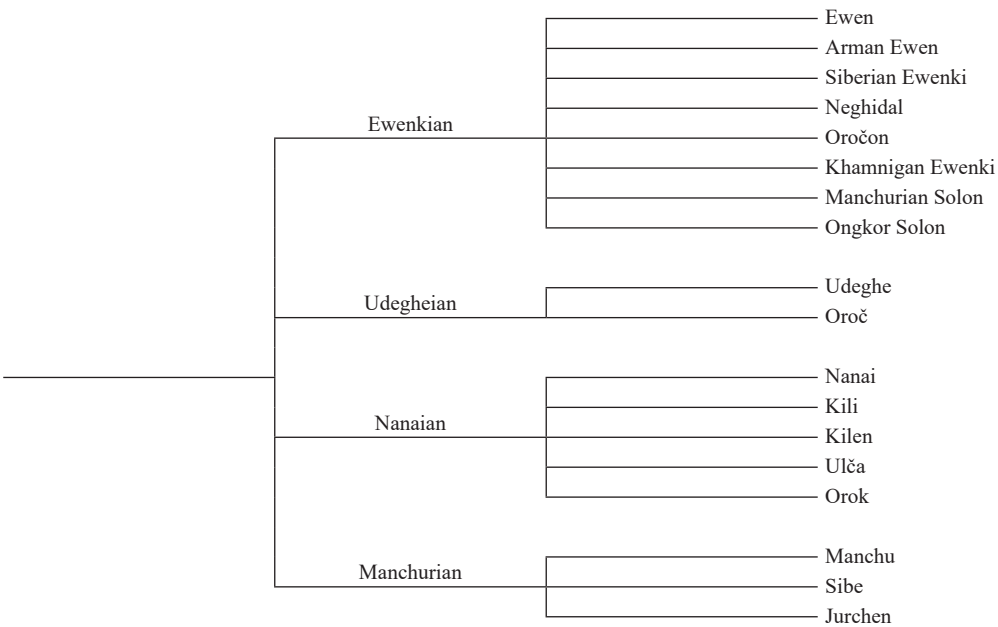
3.3. Classifications of the Tungusic languages

I. Tetrachotomic

1. The first classification of the Tungusic languages was probably proposed by Leopold von Schrenck (1883, 292; cf. also Doerfer 1975, 51). The author kept his geographical perspective so firmly that he mistakenly included Dagur, which belongs in reality in Mongolic:

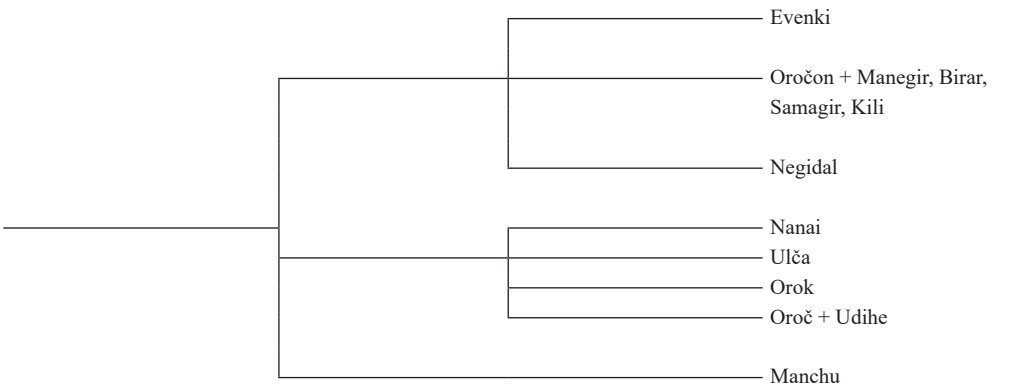


Ikegami (1974, 271–72 / 2001, 395–96) also operated with four parallel branches:

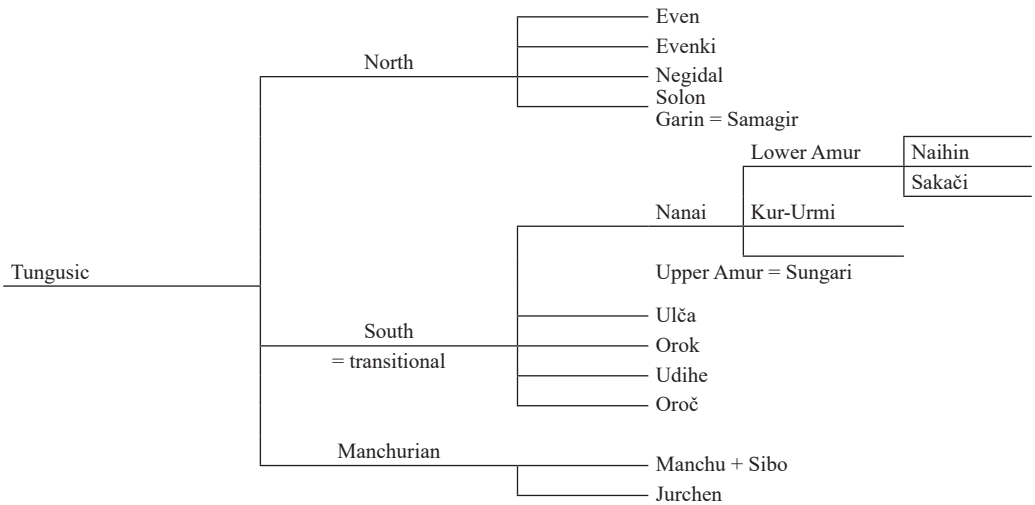


II. Trichotomic

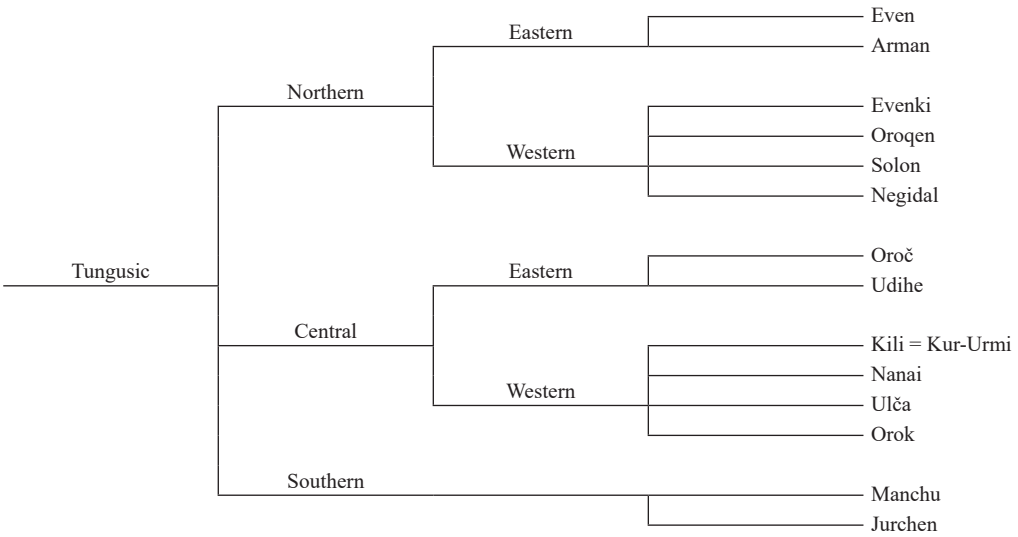
2. Šternberg (1933, 6–7; see also Doerfer 1975a, 52) introduced the trichotomic classification:



3. Avrorin (1959, 3, 7; 1960, 400–404; see also Doerfer 1975a, 55) only slightly modified Šternberg's model:



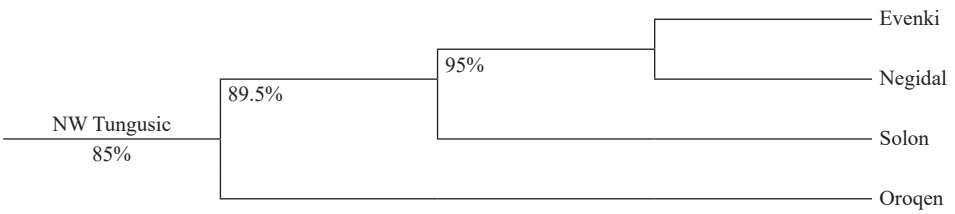
4. Doerfer (1978a, 1–26) offered his own model of the trichotomic classification:



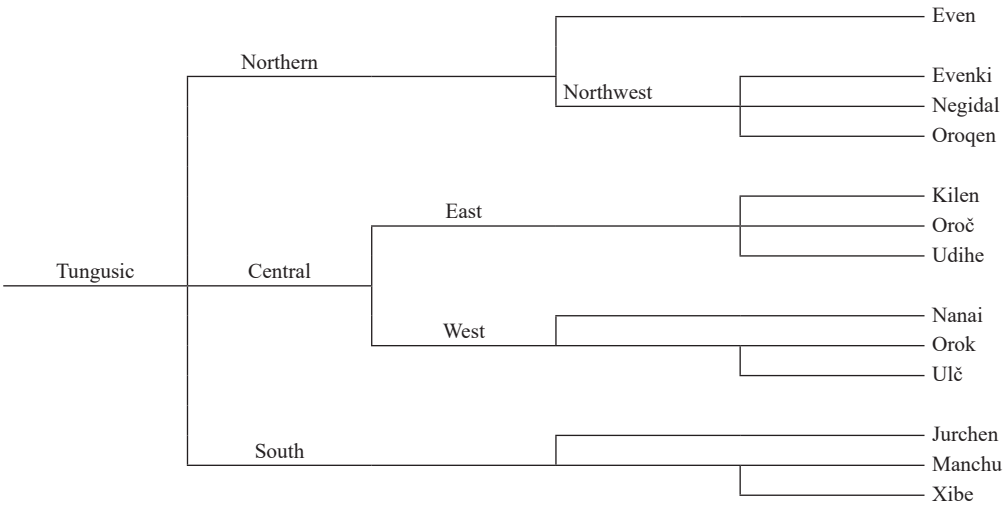
5. Whaley, Grenoble & Li (1999, 298) bring results of their lexicostatistic test applied to the languages of the Northwest subgroup:

	Oroqen	Solon	Negidal
Evenki	171/206 = 83%	161/182 = 88%	184/194 = 95%
Oroqen		155/178 = 87%	163/192 = 85%
Solon			158/174 = 91%

These figures may be projected into a tree-diagram depicting the internal relations

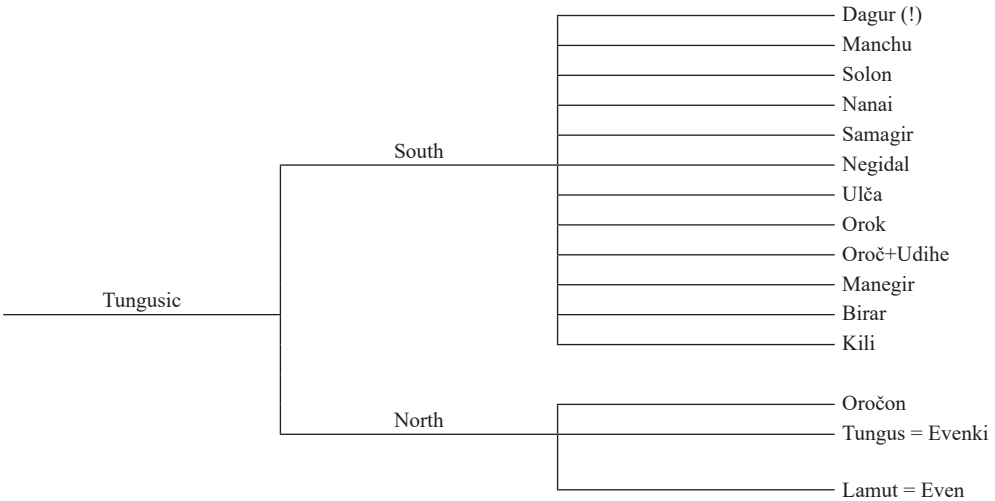


6. Three branches are also proposed by Harald Hammarström, Robert Forkel & Martin Haspelmath, eds. (2017). *"Tungusic"*. *Glottolog 3.0*. Jena, Germany: Max Planck Institute for the Science of Human History <https://glottolog.org/resource/languoid/id/tung1282>

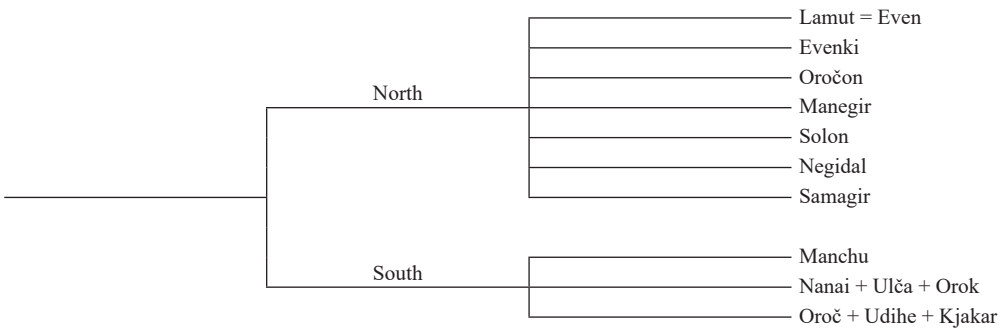


III. Dichotomic

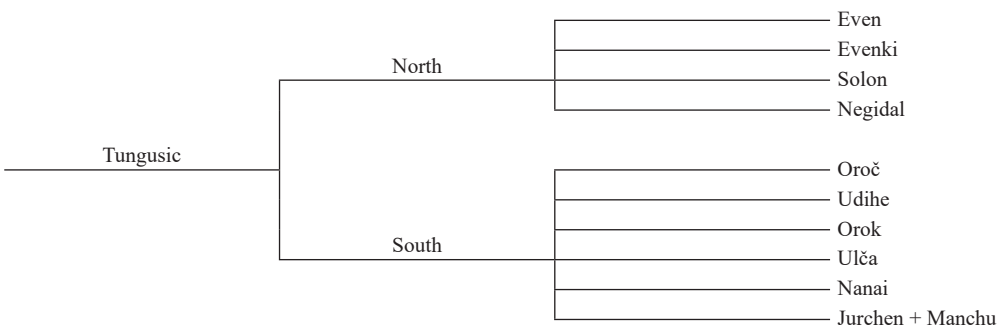
7. Patkanov (1903–1905; cited according to Doerfer 1975a, 51–52) operated with only two basic branches, without any more precise internal divisions. He also repeated the mistaken affiliation of Dagur:



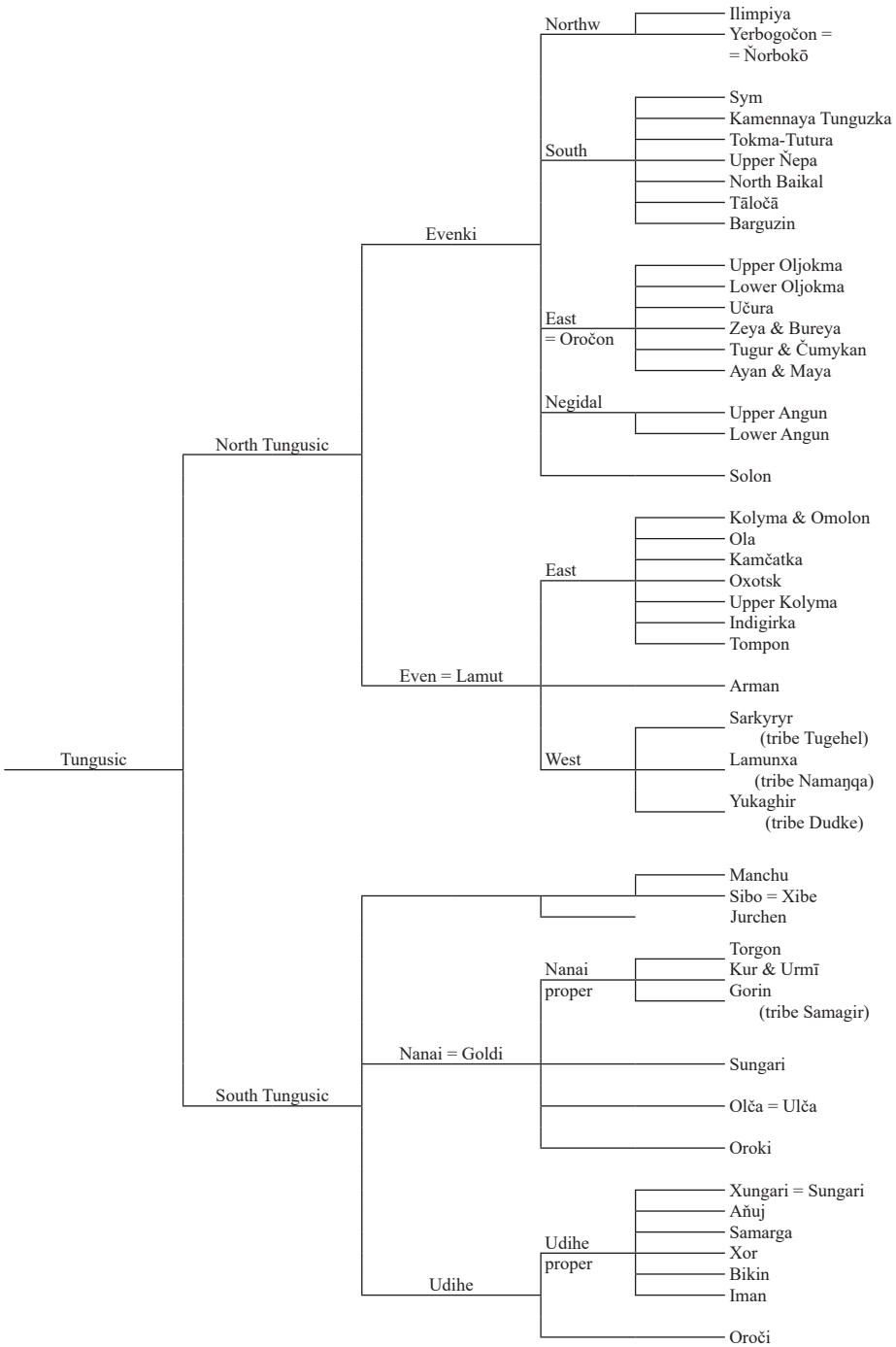
8. In its time the best model of Tungusic classification was proposed by Peter Schmidt (1915; cited according to Doerfer 1975a, 52):



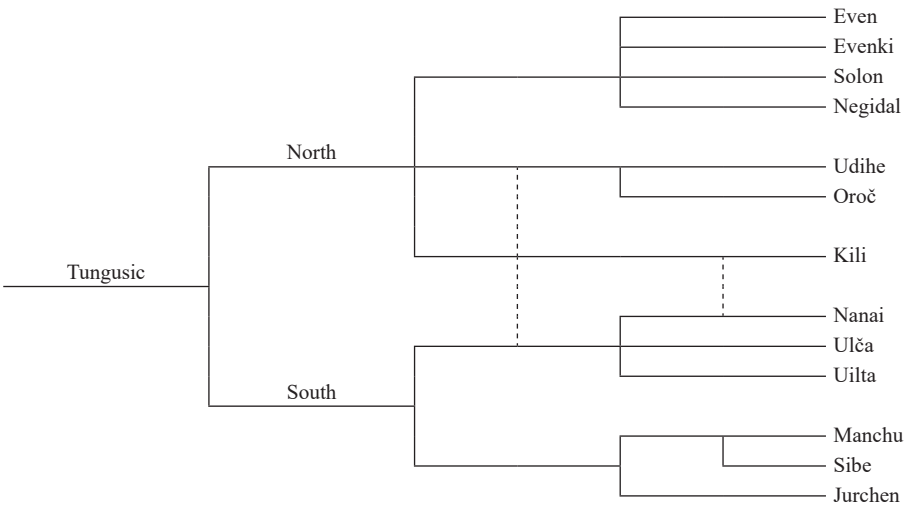
9. In principle a similar model was formulated by Poppe 1965, 25–27:



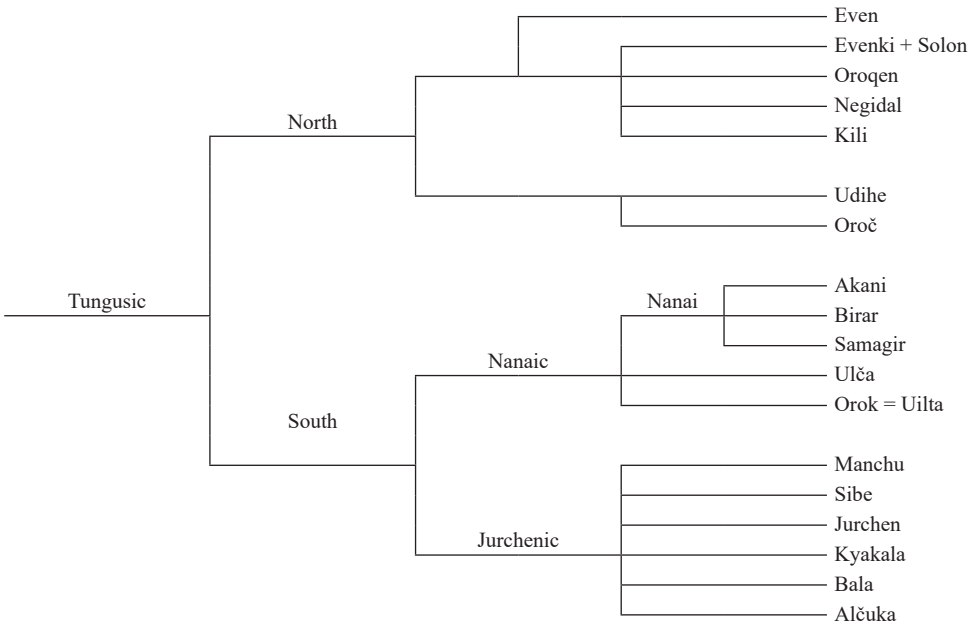
10. The most detailed classification of this type was summarized by Vera Cincius (1949, 12–13), and further developed by Benzing (1955a, 9–10), Poppe (1965, 25–27) and Menges (1968a, 27).



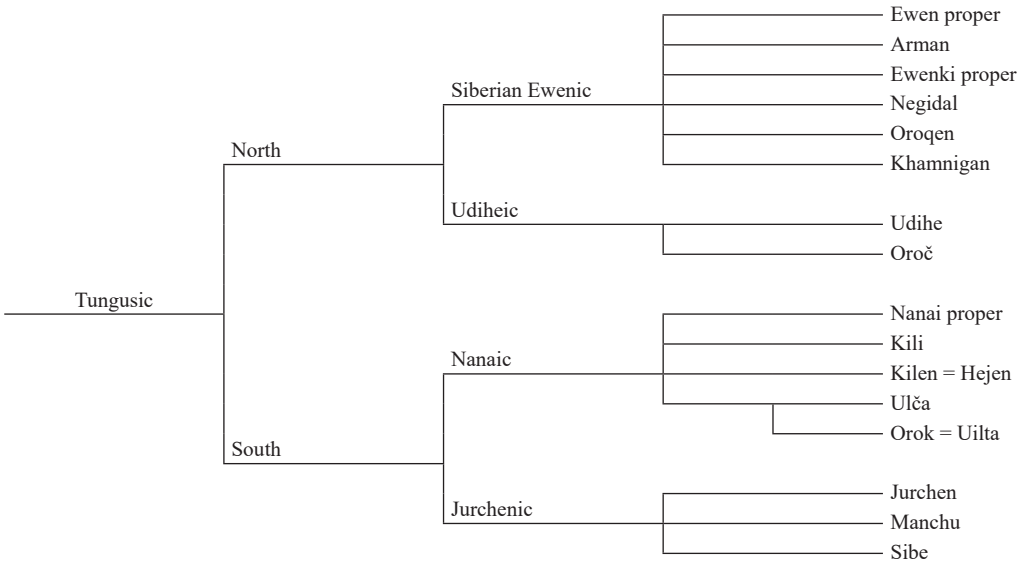
11. Stefan Georg (2004a, 52–56) offers a classification which is not too different from the model of Cincius, Benzing and Menges. Newly he defines the positions of Udihe and Oroči, which should be transitional between the north and south branches. Similarly the language called Kili (i.e. small groups of Golds in China, called here Hezhe), which was earlier classified as a Nanai dialect.



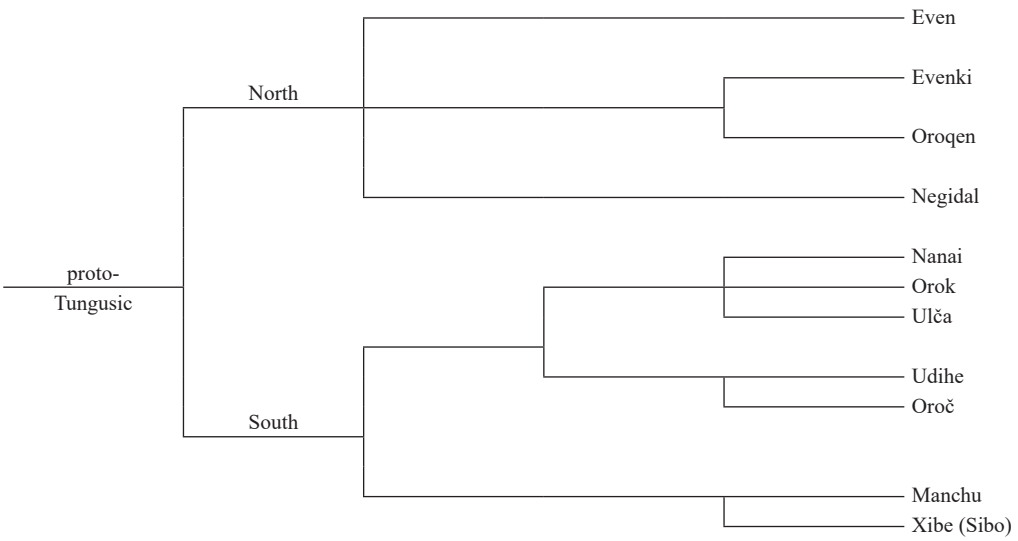
12. Only slightly different is Hölzl (2018a, 2018b)



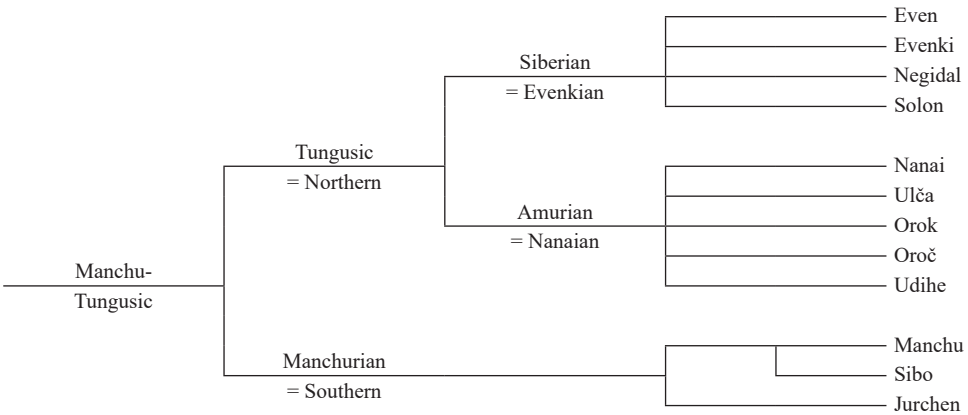
13. Janhunen (2012, 6) differs from Georg and Hölzl in the affiliation of Kili and Kilen within Nanaic:



14. The most recent, 21st, edition of the compendium *Ethnologue*[64] (2018) brings a very traditional, geographic, classification of the Tungusic languages https://www.ethnologue.com/subgroups/tungusic



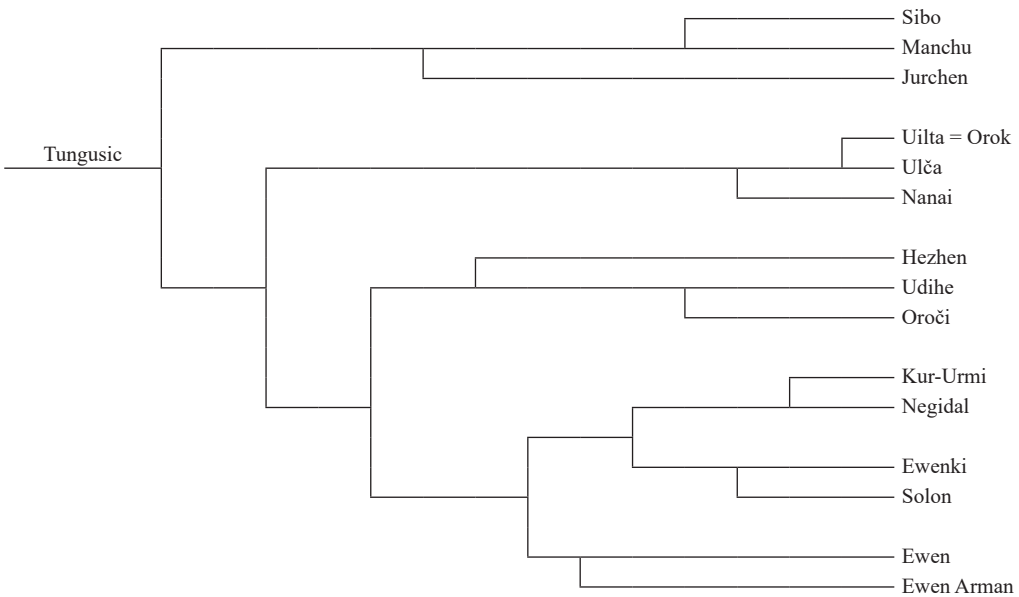
15. The classification of Sunik (1959, 333–35; 1968, 54) and Vasilevič (1960, 44) is based especially on grammatical isoglosses. They divided the Tungusic (Manchu-Tungusic in their terminology) into the two branches: Northern = Tungusic, while the Southern is reduced only to Manchurian:



64 Simons, Gary F. & Charles D. Fennig (eds.). 2018. Ethnologue: Languages of the World, Twenty-first edition. Dallas, Texas: SIL International. Online version: http://www.ethnologue.com.

Sunik's & Vasilevič's classification is supported by models based on quantitative methods:

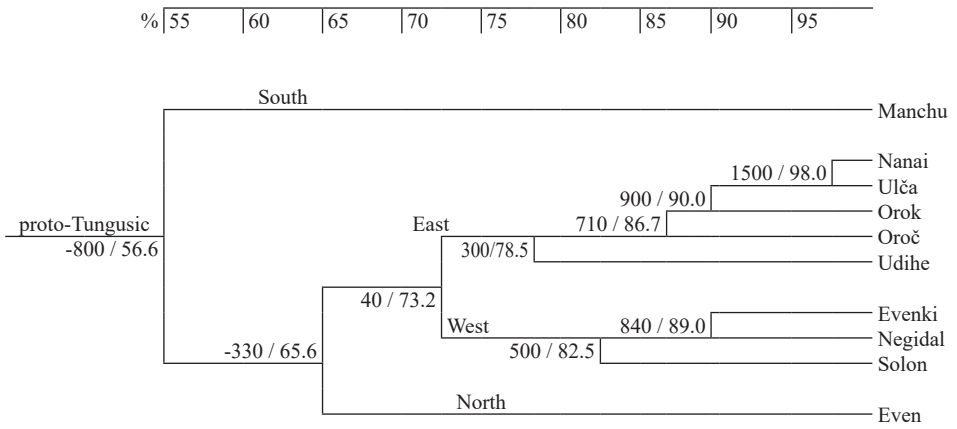
16. Kazama (2003b, 6) compared the distribution of 200 lexemes in the 15 Tungusic languages/dialects:



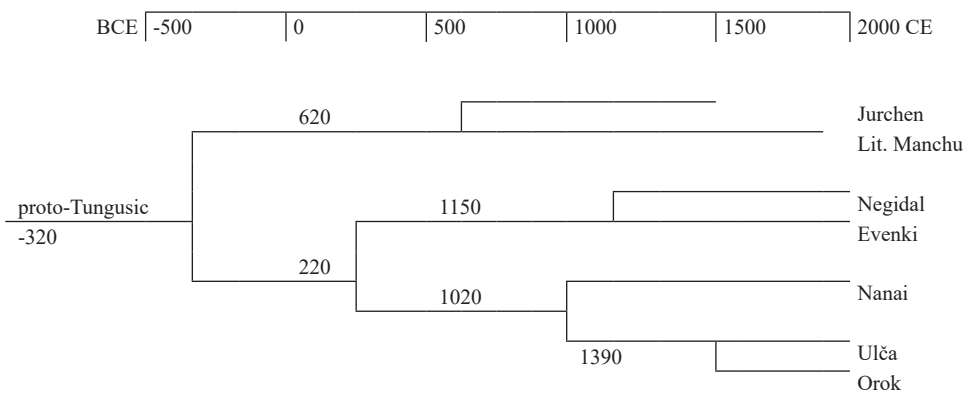
17. Vovin (1993c) has published the full documentation of used lexical lists of 10 modern Tungusic languages and final percentages of common shares among all pairs of compared languages:

%	Even	Solon	Neghidal	Evenki	Udihe	Oroč	Orok	Ulča	Nanai
Manchu	45	53	54	55	57	60	60	62	63
Even		70	75	68	64	63	62	61	62
Solon			82	83	71	72	70	72	70
Negidal				89	75	80	75	78	76
Evenki					73	75	68	72	71
Udihe						87	75	77	75
Oroč							85	89	86
Orok								92	88
Ulča									98

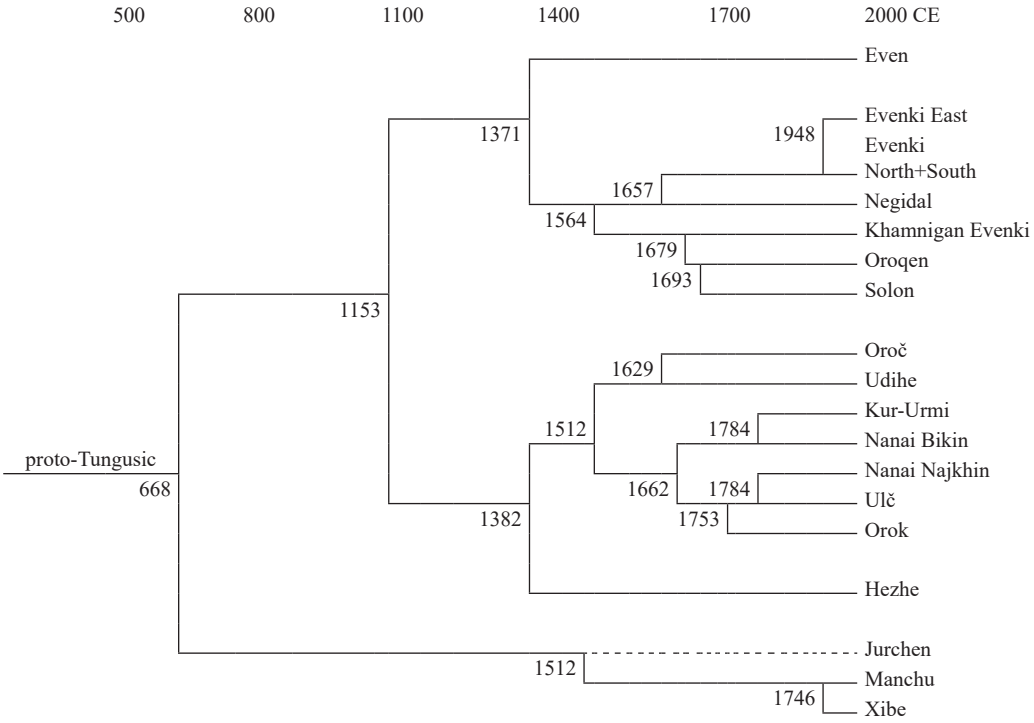
Vovin's results may be depicted by the following tree-diagram:



18. Younger results were obtained by the team of Sergei Starostin (ms. 2004), applying so-called 'recalibrated' glottochronology for 7 Tungusic languages, including Jurchen (wordlists were collected by Starostin 1991, 200–206):

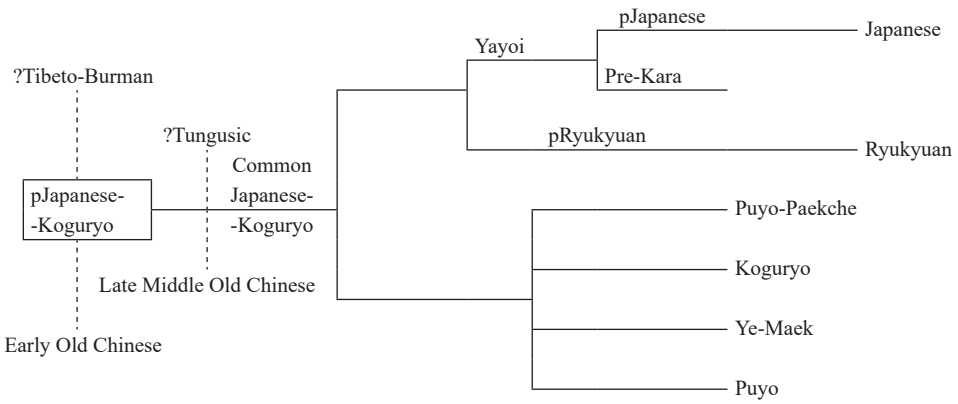


19. Sonya Oskolskaya (2018)

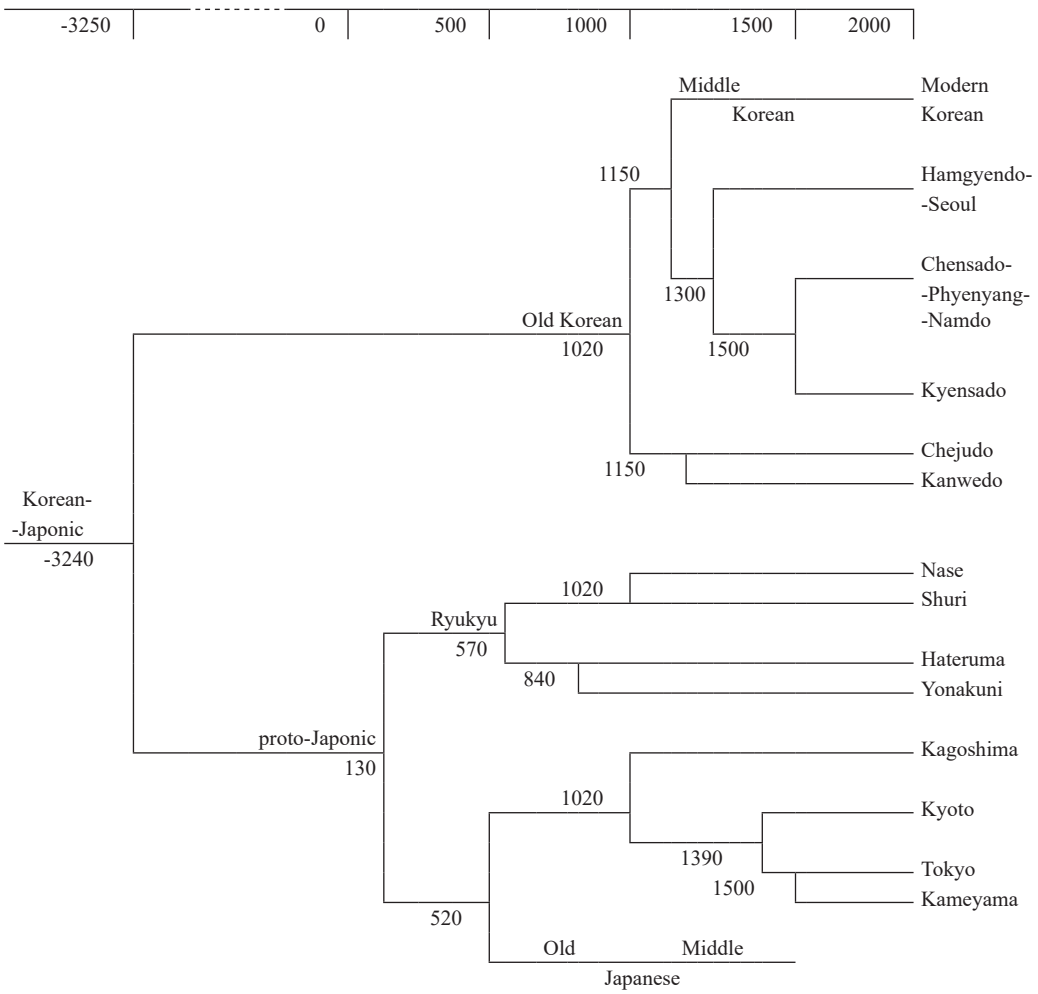


3.4./5. Koreanic & Japonic classification

1. Beckwith (2007, 28) proposed his convergent model based on qualitative approach:

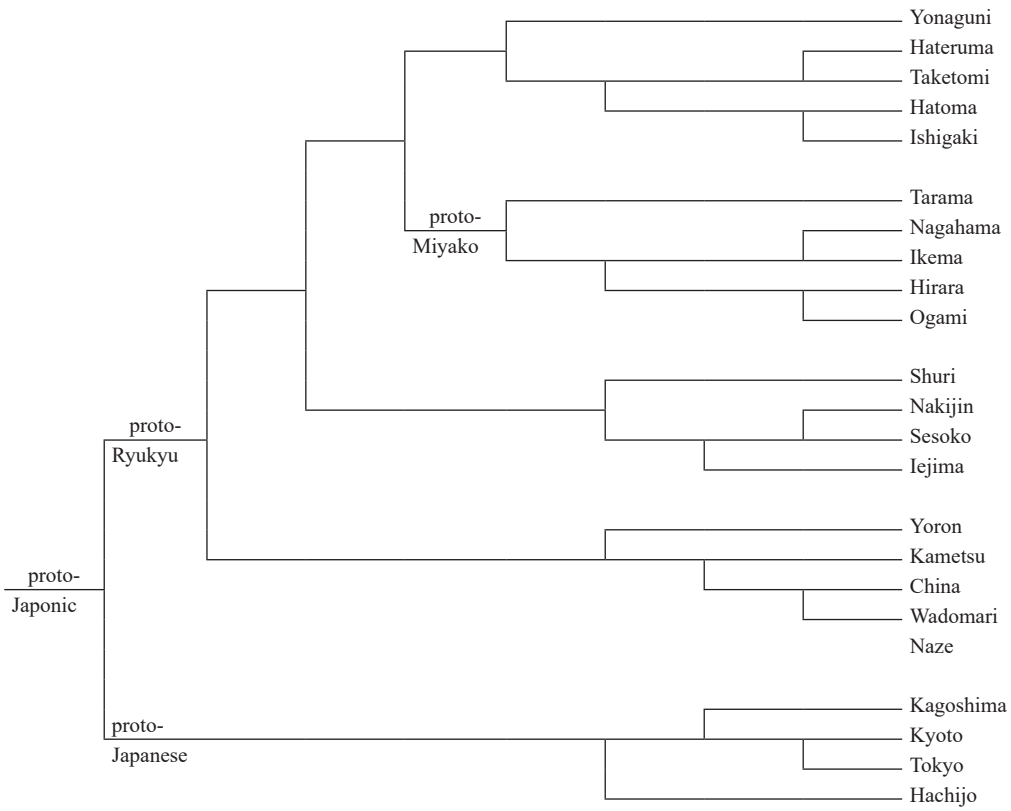


2. Sergei Starostin (1991) applied his glottochronological test to Korean and Japanese, including modern dialects and old literary languages, Middle Korean and Old Japanese respectively.

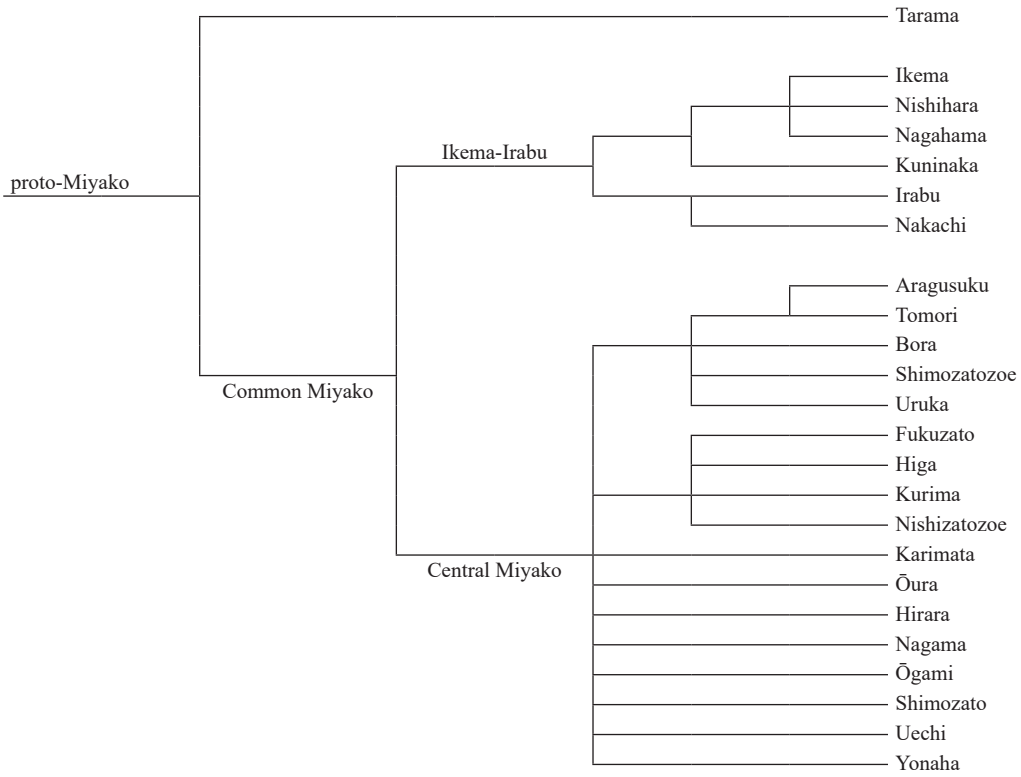


Note: Applying his own modification of recalibrated glottochronology, George Starostin & Alexei Kassian (2010 ms.) estimate the disintegration of ancestors of Korean and Japonic dialect clusters at 4300 BCE.

3. Cladogram of the Japonic dialect continuum by modern data (Pellard 2009, 276)

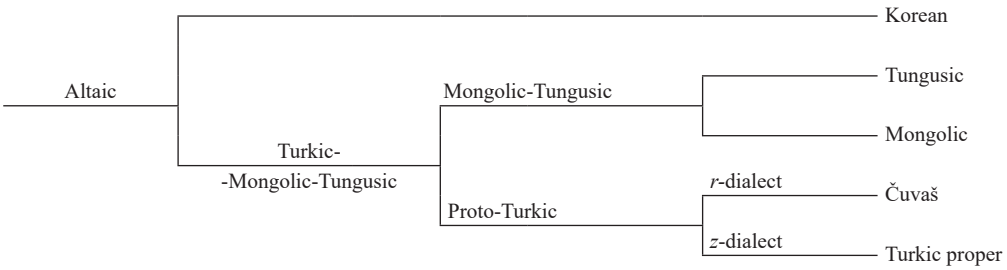


4. Cladogram of the Miyako dialect cluster (Pellard 2009, 295)

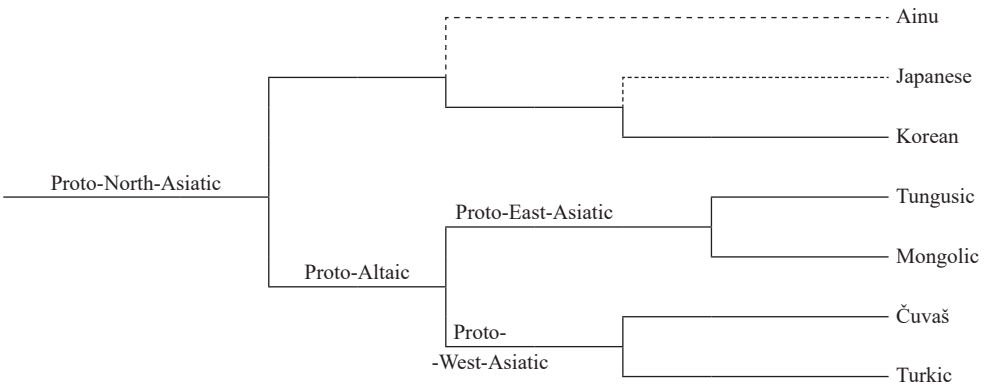


3.6. Altaic classification

1. Poppe (1960, 8) is the author of the qualitative model, which expressed *communis opinio* in the 'classical' era of Altaic linguistics, when he developed the ideas of Ramstedt:



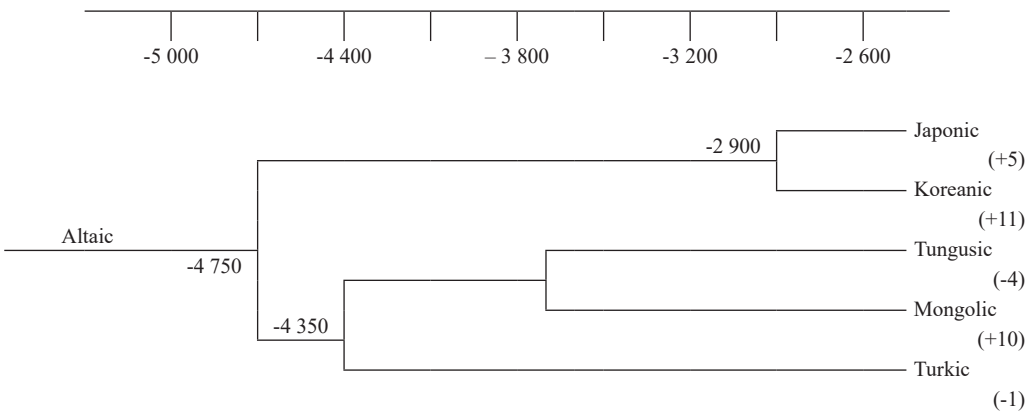
2. Poppe's reviewer, John C. Street (1962, 95) added Japanese (and without any comment, also Ainu, although only as a hypothetical possibility) in his diagram and offered different terminology:



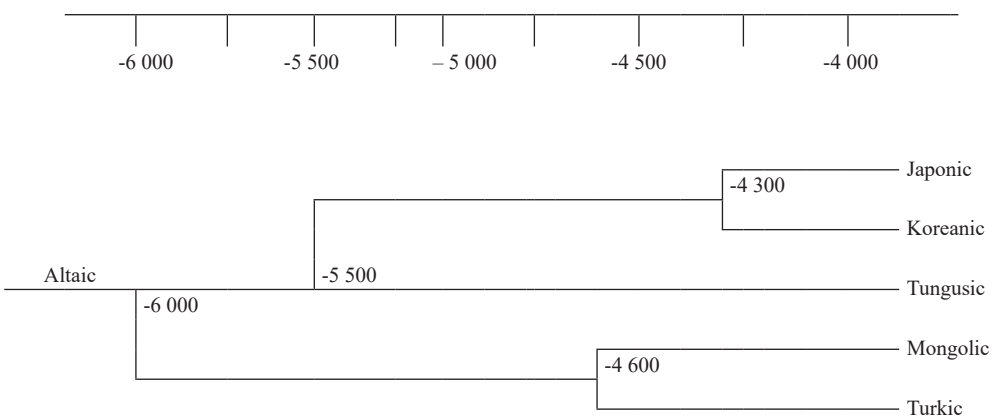
Remarkable are two details. First, Street thought that the disintegration of Turkic preceded the disintegration of Proto-Mongolic and Proto-Tungusic from one another, referring to Poppe (1960, 153–55). Second, he reserved the term Proto-Altaic to a common ancestor of only three branches, Proto-Turkic, Proto-Mongolic and Proto-Tungusic, although he accepted their wider relationship to Korean and Japanese. Recently Martine Robbeets has returned to this conception, although she has replaced Street's (and Martin's) 'Proto-North-Asiatic' with her term 'Transeurasian'.

3. The first attempt to classify the Altaic (macro-)family on the basis of glottochronology was proposed by S. Starostin, A. V. Dybo and O. Mudrak in their "Etymological Dictionary of Altaic languages" published in 2003 (*EDAL* 234). They have published only a table with percentages of common basic lexicon, mutually shared in all pairs of branches. Their results may be depicted in the following tree-diagram (the reconstructed daughter protolanguages were projected into the present chronological level depending upon the dating of their respective disintegrations – see the data in the left column):

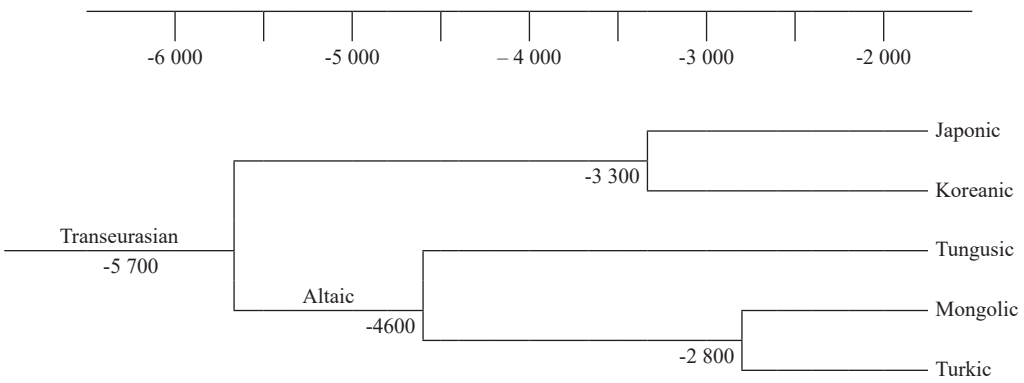
branch (internal disintegration)	Mongolic	Tungusic	Koreanic	Japanic
Turkic (1st cent. BCE)	25.0%/20.0%	25.0%/16.9%	17.0%/13.8%	19.0%/14.4%
Mongolic (10th cent. CE)		29.0%/22.3%	18.0%/16.6%	22.0%/18.9%
Tungusic (4th cent. BCE)			23.0%/17.9%	22.0%/16.0%
Koreanic (11th cent. CE)				33.0%/28.6%
Japanic (5th cent. CE)				–



4. A more recent version of the classification of the Altaic macrofamily is from George Starostin & Alexej Kassian (2010, ms.), applying their own version of the recalibrated glottochronology, which shifts the disintegration of the Altaic unity more than a millennium earlier in comparison with the conclusion of his father, Sergej Starostin. In this model Tungusic takes more or less the central position, with a closer affinity to the peninsular-insular superbranch:



5. The most recent model was proposed by Robbeets 2017, 103 (cf. also Robbeets & Bouckaert 2018, 158). Its topology agrees with the model 3 constructed on the basis of data summarized in *EDAL* 234:



4. Etymological analyses of the main ethnonyms or choronyms

4.1. Ethnonym Türk

4.1.1. Primary sources

The autonym *Türk* appears practically synchronically in several non-Turkic traditions only in the second half of the 6th century, namely in Byzantine Greek, Sogdian and Chinese. This event apparently corresponds with establishment of the Turkic Qaghanate by Bumin Qaghan in 552 CE.

Greek

Probably the first information about the ethnonym *Türk* was mediated to Europe by Zemarchus, a Cilician, who was tasked by Justin II, the Byzantine emperor (reign 565–578), with an embassy to Sogdiana in 569–571. From the middle of the 6th cent. Sogdiana was controlled by Turks. The reason for Zemarchus' embassy was an alliance between Byzantines and Turks, to eliminate Persians from the trade with silk. The Turks sent their ambassador in Constantinople already in 568. The complete description of Zemarchus' journey was lost, but some fragments of his witness were preserved by other authors. One such source was History of Theophanes of Byzantium about the events of 566–581 CE, in the time of the reigns of Justin II and Tiberius II. Again, it was preserved only thanks to excerpta by later authors, namely Photius (810/820–891/893), a patriarch of Constantinople in 858–867 and 877–886. In his *Bibliotheca* or *Myriobiblon* Photius summarized 279 reviews of books known to him, including Theophanes' treatise. Let us mention one important passage:

§64. Ὅτι τὰ πρὸς Εὖρον ἄνεμον τοῦ Τανάϊδος **Τοῦρκοι** νέμονται, οἱ πάλαι Μασσαγέται καλούμενοι, οὓς Πέρσαι οἰκείᾳ γλώσσῃ Κερμιχίωνάς φασι. Καὶ αὐτοὶ δὲ ἐν τῷ τότε δῶρα καὶ πρέσβεις πρὸς βασιλέα Ἰουστῖνον ἔστειλαν, δεόμενοι μὴ ὑποδέξασθαι αὐτὸν τοὺς Ἀβάρους. Ὁ δὲ τὰ δῶρα λαβὼν καὶ ἀντιφιλοφρονησάμενος ἀπέλυσεν εἰς τὰ οἰκεῖα. Τοῖς δὲ Ἀβάροις ὕστερον ἐλθοῦσι, καὶ Παννονίαν οἰκῆσαι καὶ εἰρήνης τυχεῖν δεομένοις, διὰ τὸν πρὸς τοὺς **Τούρκους** λόγον καὶ τὰς συνθήκας οὐκ ἐσπείσατο.

Ὅτι τὴν τῶν σκωλήκων γένεσιν ἀνὴρ Πέρσης βασιλεύοντος Ἰουστινιανοῦ ἐν Βυζαντίῳ ὑπέδειξεν οὔπω πρότερον ἐγνωσμένην Ῥωμαίοις. Οὗτος δὲ ἐκ Σηρῶν ὁρμηθεὶς ὁ Πέρσης τὸ σπέρμα τῶν σκωλήκων ἐν νάρθηκι λαβὼν μέχρι Βυζαντίου διεσώσατο, καὶ τοῦ ἔαρος ἀρξαμένου ἐπὶ τὴν τροφὴν τῶν συκαμίνων φύλλων ἐπαφῆκε τὰ σπέρματα· τὰ δὲ τραφέντα τοῖς φύλλοις ἐπτε ροφύησέ τε καὶ τἄλλα εἰργάσατο. Ὧν τήν τε γένεσιν καὶ τὴν ἐργασίαν ὁ βασιλεὺς Ἰουστῖνος ὕστερον τοῖς **Τούρκοις** ὑποδείξας ἐθάμβησεν. Οἱ γὰρ **Τοῦρκοι** τότε τά τε Σηρῶν ἐμπόρια καὶ τοὺς λιμένας κατεῖχον. Ταῦτα δὲ πρὶν μὲν

Πέρσαι κατεῖχον, Ἐφθαλάνου δὲ τοῦ Ἐφθαλιτῶν βασιλέως, ἐξ οὗ καὶ τὸ γένος ἔσχε τὴν κλῆσιν, Περόζην καὶ Πέρσας νικήσαντος ἀφῃρέθησαν μὲν τούτων οἱ Πέρσαι, δεσπόται δὲ κατέστησαν Ἐφθαλῖται· οὓς μικρῷ ὕστερον μάχῃ νικήσαντες **Τοῦρκοι** ἀφεῖλον ἐξ αὐτῶν καὶ ταῦτα. Ἰουστῖνος δὲ Ζήμαρχον ἐς τοὺς **Τούρκους** πρέσβυν ἀπέστειλεν· ὃς καὶ λαμπρῶς ἑστιάσας τε τοὺς **Τούρκους** καὶ ἐς τὰ μάλιστα φιλοφρονηθεὶς ἐς τὸ Βυζάντιον ἐπανῆει. Διὸ καὶ ὁ Χοσρόης ἐπ' Αἰθίοπας φίλους ὄντας Ῥωμαίοις, τοὺς πάλαι μὲν Μακροβίους νῦν δὲ Ὁμηρίτας καλουμένους, ἐστράτευσε καὶ τόν τε βασιλέα τῶν Ὁμηριτῶν Σανατούρκην διὰ μηράνους τοῦ Περσῶν στρατηγοῦ ἐζώγρησε, τήν τε πόλιν αὐτῶν ἐξεπόρθησε, καὶ τὸ ἔθνος παρεστήσατο. Διέξεισι δὲ καὶ ὅπως Ἀρμένιοι ὑπὸ Σουρήνου κακούμενοι, καὶ μάλιστα περὶ τὴν εὐσέβειαν, τόν τε Σουρήναν ὁμοφρονήσαντες διὰ Οὐαρδάνου οὗ τὸν ἀδελφὸν Μανουὴλ ἐτύγχανεν ἀνελών, καὶ δι' ἑτέρου τινὸς Οὐάρδου ἀνεῖλον, καὶ Περσῶν ἀποστάντες Ῥωμαίοις προσεχώρησαν, τὸ Δούβιος τὸ πόλισμα, ἐν ᾧ κατῴκουν, ἀπολιπόντες καὶ πρὸς τὰ Ῥωμαίων ἤθη γενόμενοι καὶ τοῦτο μάλιστα γέγονε τῆς τῶν Περσῶν πρὸς Ῥωμαίους σπονδῶν καταλύσεως αἴτιον. Ἀπέστησαν δὲ παραυτίκα καὶ Ἴβηρες, καὶ προσεχώρησαν Ῥωμαίοις, Γοργένους αὐτῶν ἡγεμονεύοντος· ἦν δὲ τῶν Ἰβήρων τότε ἡ Τίφιλις μητρόπολις.

<http://khazarzar.skeptik.net/pgm/PG_Migne/Photius%20of%20Constantinople_PG%20101–104/Bibliotheca.pdf>

§64. Theophanes of Byzantium: *History*

"The **Turks**, formerly called Massagetae, and by the Persians Kirmikhiones, who live to the east of the Tanais (Don), at this time sent an embassy with gifts to the emperor Justin, beseeching him not to receive the Avars. Justin accepted the gifts, received the ambassadors kindly, and dismissed them. When the Avars subsequently approached Justin, requesting permission to inhabit Pannonia and desiring to conclude peace, he refused, owing to the agreement he had made with the **Turks**.

During the reign of Justinian, a certain Persian, a visitor to Byzantium, explained to the emperor the art of rearing silkworms, hitherto unknown to the Romans. This Persian, who had come from the land of the Seres, concealed the eggs of the silkworms in a hollow cane and conveyed them to Byzantium. At the beginning of spring, the eggs were placed upon mulberry leaves, on which the worms fed when hatched, afterwards turning into moths, which spun the silk. When king Justin afterwards showed the **Turks** how the worms were bred and how silk was made, he greatly surprised them, since at that time they had possession of the markets and harbours of the Seres, formerly held by the Persians. Ephthalanus, king of the Ephthalites, from whom the tribe derived its name, having defeated Perozes and the Persians, drove them out of their territory and took possession of it, being themselves shortly afterwards in turn defeated and dispossessed by the **Turks**. Zemarchus, an ambassador sent by Justin to the **Turks**, entertained them at a magnificent banquet and having been received with every kindness returned home. Chosroes thereupon marched against the Aethiopians (formerly called Macrobii {= China}, and at that time Homerites), who were on friendly terms with the Romans;

with the aid of Miranes, the Persian general, he captured Sanaturces, king of the Homerites, sacked their city and enslaved the inhabitants. The author also relates how the Armenians, being ill-treated by Surenas, especially in the matter of religion, entered into a conspiracy with Vardanes (whose brother Manuel had been put to death by Surenas) and a certain Vardus, slew Surenas, revolted from the Persians and went over to the Romans, abandoning the town of Dubios where they lived and crossing into Roman territory. This was the chief reason why the Persians broke the treaty with the Romans. Immediately afterwards the Iberians also revolted and with their king, Gurgenes, deserted to the Romans. At that time Tiphilis was the capital of Iberia."

The Library of Photius, Volume I, translated by J.H. Freese.
London – New York: The MacMillan Company 1920
<http://www.tertullian.org/fathers/photius_03bibliotheca.htm#64>

Cf. also Dobrovits 2011, 380.

The most detailed witness about Zemarchus' mission to Central Asiatic Turks from the second half of the 6th cent. was preserved by Menander Protector / Guardsman (Μένανδρος Προτήκτωρ), born around the middle of the 6th cent.:

ὡς δὲ ξύμπαν εἰπεῖν, πολλαῖς ἀτραποῖς ὁμιλήσαντες καὶ δυσχωρίαις παρεγένοντο ἔνθα τὰ πολεμικὰ σύμβολα τοῦ Τουρξάνθου ἐτύγχανεν ὄντα· οὗτος δὲ εἷς τῶν παρὰ **Τούρκοις** ἡγεμόνων. ἐν ὀκτὼ γὰρ μοίραις διεδάσαντο τὰ ἐκείνῃ ἅπαντα οἷς γε τοῦ φύλου τῶν **Τούρκων** ἔλαχε προεστάναι. Ἀρσίλας δὲ ὄνομα τῷ παλαιτέρῳ μονάρχῳ **Τούρκων**.

"In short, they travelled by many roads and difficult ways and came to the war camp of Turxanthus, who was one of the leaders of the **Turks**. The ruler of the **Turkish** people had divided up all the land there into eight parts. The senior ruler of the **Turks** was named Arsilas."

edited and translated by Blockley 1985, 172–73

ὁ δὲ Ζήμαρχος κατὰ δὴ τὸ ψαμαθῶδες τῆς λίμνης παροδεύων ἐπὶ ἡμέρας δέκα καὶ δύο δυσβάτους τέ τινας χώρους παραμειψάμενος ἐγένετο κατὰ τὰ ῥεῖτρα τοῦ Ἴχ, οὐ μὴν ἀλλά καὶ κατὰ τὸν Δαΐχ, καὶ διὰ λιμνῶν ἑτερων αὖθις ἐς τὸν Ἀττίλαν

"Zemarchus travelled along the sandy shore for twelve days and when he had skirted some difficult terrain came to the river Ikh, then to the Daikh and, passing some other lakes, to the Attila."

edited and translated by Blockley 1985, 124–25

Ὅτι γενόμενοι ἐν Ἀλανίᾳ παρὰ Σαρώσιον τὸν ἐκείνη ἡγεμόνα καὶ ἅμα τοῖς ἑπομένοις **Τούρκοις** ἐσφατῆσαι βουλόμενοι, ὁ Σαρώσιος τὸν μὲν Ζήμαρχον καὶ τούς οἱ ἑπομένους ἐδέξατο ἀσμένως, τοὺς δὲ δή πρέσβεις τῶν **Τούρκων** ἔφασκε μὴ πρότερον τῆς ὡς αὐτὸν εἰσόδου τυχεῖν ἢ καταθεμένους τὰ ὅπλα. τοιγάρτοι καὶ ἄμιλλα αὐτοῖς ἐγέντο περὶ τούτου

ἐπὶ ἡμέρας τρεῖς, καὶ Ζήμαρχος ἦν τῶν φιλονεικουμένων διαιτητής. τέλος ἀποθέμενοι τὰ ὅπλα οἱ **Τοῦρκοι**, ὡς Σαρωσίῳ ἐδόκει, ὡς αὐτὸν ἐσεφοίτησαν.
"When they came to the land of the Alans and wished, together with the **Turks** who were with them, to be granted an audience with their ruler Sarosius, he gladly received Zemarchus and his companion but refused to admit the **Turkish** envoys untill they had disarmed. they argued about this for three days untill Zemarchus acted as referee in the dispute. Finally, the **Turks** laid down their weapons, as Sarosius wished, when they came before him."

edited and translated by Blockley 1985, 126–27

See also Dobrovits 2011, 388, fn. 88; 393, fn. 104; 395.

Theophylactus Simocatta (Θεοφύλακτος Σιμοκάτ(τ)ης): *Historiae* (from first half of the 7th cent.; about the end of the 6th cent.) identified these Turks with Huns:
1.5.8. Οὖννοι δ' οὗτοι, προσικοῦντες τῇ ἕῳ, Περσῶν πλησιόχωροι, οὓς καὶ **Τούρκους** ἀποκαλεῖν τοῖς πολλοῖς γνωριμώτερον
"These are Huns who dwell in the east as neighbours of the Persians and whom it is more familiar for the many to call **Turks**."
3.6.9. τῶν Οὔννων τοιγαροῦν τῶν πρὸς τῷ βορρᾷ τῆς ἕω, οὓς **Τούρκους** ἔθος Πέρσαις ἀποκαλεῖν
"the Huns, who dwell towards the north-east and whom it is customary for the Persians to call **Turks**."
4.6.10. τῶν Οὔννων ..., οὓς **Τούρκους** πολλαχοῦ που ἱστορία ἐγνώρισεν
"... approached the Hun tribes whom history has almost universally recognised as **Turks**."

Translated by Michael & Mary Whitby (see Dobrovits 2011, 381)

Sogdian
The first witness about the Turks directly in Central Asiatic sources appears in the Sogdian inscription from Bugut, called according to Bugut ("deer") Mountain by the Bayn Tsagaan Gol ("the sacred white lake"), located in the Arkhangai Aimag in Western Mongolia, where the events of the 571/572–580/582 years are described:

Original Text in Sogdian:
B1 (Left Side)
1) *('mwh?) […] (pt)s'kh 'ws't δ'r'nt* ***tr'wkt*** *c(yn)st'n kwt(s)'tt 'γšywn'k*
2) *('YK)* [lacuna of some 15 letters] *(ZK?)****trwkc*** *βγy nw''r γ'γ'n 'wskwp'r ckn'cw mγ'n*
3) *(tykyn pr)[w] (γ'γ'n wy'k) w'(š)t '(X)RZY nwkr ZK βγy mwγ'n γ'γ'n 'PZY βγy mγ'n tyky(n)*
4) [lacuna of 5–6 letters, perhaps *cyw'nt*?] *pyštrw?) k'w 'wrts'r prm prw 'nγt'k 'βc'npδ 'swšwyn't wm'[t'nt]*

5) [lacuna of some 25 letters] *(t ʻXRYZ n)wkr cyw'nt pyštrw βγy m[wγ'n γ'γ'n]*

English translation by Sergej G. Kljaštornyj and Vladimir A. Livšic:
B1 (Left Side)
1) "This stele was erected by the **Turks** (under) *Kwts't* the ruler of China
2) when … … the **Turkish** lord *Nivar-qaghan*. Since *Mahan-*
3) *-tegin* ascended the place of qaghan, the lord *Muhan-qaghan* and the lord *Mahan-tegin*
4) after [that they] were saviours for the whole world during a long period [*lit.* after that and in
the future]
5) … … … And now thereupon, after this, the lord *M[uhan-qaghan]*."

Kljaštornyj & Livšic 1972, 85, 87,
<http://steppes.proboards.com/thread/358/bugut-inscription>

The authors mention *tr'wkt* "Turks", *trwkc* "Turkish", */truk^{o}/* via metathesis or umlaut as in *dγwd-* "daughter" (**duγd-*) or *sγwd* "Sogdian", while the adj. *twrkc'ny* "Turkish" /*turkčāne*/ from the Qarabalghasun inscription preserves the sequence */turk^{o}/* (p. 87). Sogdian *tr'wk* or Tibetan *drug(-gu)* may be a source of Khotanese *ttrūkä*, where the variant *tturkä* is also attested (p. 88). Cf. also Dobrovits 2011, 382.

Chinese
In Chinese historical treatises completed or supplemented in the Tang era appears the ethnonym 突厥 *tūjué*, which has been identified as the Chinese transcription of the ethnonym *Türk*:

周書 *Zhōu Shū* "Book of Zhou"
The ethnonym 突厥 *Tūjué* was first mentioned in a document dated to AD 542, namely in a biography of 宇文測 Yuwen Ce[65], included in the "Book of Zhou".
Chapter 19: 木桿可汗 Muqan, Kaghan of 突厥 *Tūjué* is mentioned in AD 563 (Chavannes 1903, 226, fn. 5).
隋書 *Suí Shū* "Book of Sui", devoted to the Sui Dynasty (581–618), completed in AD 636.
Chapter 3 (Chavannes 1903, 19: events of AD 611);
Chapter 84: origin of *Tūjué* is in 大邏便 Daluobian, son of 木桿可汗 Muqan Kaghan, died in AD 572 (Chavannes 1903, 13, 48).

65 http://www.chinaknowledge.de/History/Altera/turks.html

Let us discuss variants of the Middle Chinese pronunciation of 突厥 *tūjué*, consisting of two characters used to express the phonetic form of the foreign ethnonym, namely
突 *tū* "to dig through, break through, protrude; bursting forth, brusquely, suddenly";
厥 *jué* "his, her, its, their"; rarely "he, she, it, they; to butt":
Karlgren (*GSR* 0489 a + 0301 d): Middle Chinese **t'uətki̯wɐt* & **d'uətki̯wɐt*;
Pulleyblank (1991, 311+168): Late Middle Chinese **tɦutkyat* < Early Middle Chinese **dwətkuat*;
Starostin (*ChEDb* 2005): Middle Chinese **thotkwət* < Late Postclassic Chinese **thwə̄tkwət*;
Schuessler (2009, 313+240 /§§31–12+22–2): Middle Chinese **tʰwətkjwɐt* & **dwətkjwɐt*, besides Old Northwest Chinese **dotkuat*;
Baxter & Sagart (2014): Middle Chinese **dwotkjwot*.
All these reconstructions reflect adaptations of the Turkic ethnonym **Türküt* or **Türkür* (cf. Doerfer, *TMEN* II, 483).

Arabic
In the beginning of the 7th cent. the ethnonym *Türk* was documented in Arabic in the Diwan of the poet an-Nābiġa aḏ-Ḏubyānī (535–604):

baka Ḥāriṯu lǦau̯lāni min faqdi rabbihī
waḤau̯rānu minhū mūḥišū mutaḍāʔilu
quʕūdā lahū Ġassānu yarǧūna ʔau̯bahū
wa Türkū waraḥtu lʔaʕǧamīna waKābulu

"es weint Ḥāriṯ wegen des Verlustes seines Herren, während Ḥāriṯ um ihn betrübt und (vor Schmerz) eingeschrumpft ist. Hockend erwarten die Ġassān seine Rückkehr, auch die Türken und die Perser und die Afghanen" (see Doerfer, *TMEN* II [1965], 490).

Mongolic
The oldest (Para-)Mongolic inscription from Khüis Tolgoi[66] (Bulgan Province in Mongolia), discovered in 1975 by Navaan and dated to the beginning of the 7th cent., shortly after the death of Niri Qaghan in 603 CE:

Transcription of Dieter Maue (2017)

(01) bɩ̣tɩ$_1$_*ñ*a̤r kagan dig*i*$_1$n *š*ɩ̣ñɩ̣n bodɪ-satva to̤ro̤x
(02) kagan *bṳ*da̤ kaganu ukax ukaǰu xɩ̣$_1$rɩ̣ añakay
(03) ...*ɩ*$_1$ *t*ɩ̣$_1$n ǰa̤ x bo̤dɩ̣ bigiy-ñar ba̤*y*ɩ̣ do̤lṳ ǰa̤ǰṳ hüg*bü*[?]
(04) +$^?$ *b*[ɩ̣]tɩ̣$_1$ *ǰ*ɩ̣*l*o̤na̤r k(a)ranyag*u*ñ tṳwa̤ pṳro̤*r* čɩ̣čɩ̣$_1$ra̤ pugti$_1$g ña̤la̤*n*

66 <https://en.wikipedia.org/wiki/Inscription_of_H%C3%BCis_Tolgoi>

(05) × *k*[a]*g*a[nu?] + k*at*o-*ñar* dügi$_1$d nı̣$_1$rı̣ kagan **turū̆g** kagan
(06) u*č* d(o̤)ro̤ *ta̤ya̤*ǰṳ xı̣$_1$rı̣ härgin bargo[l] pa̤lxı̣$_1$r [+]xa̤čı̣ hi$_1$gbi$_1$ǰ
(07) tüg*ǰ*ü u*ka*b*ar-ñar* kagan xa̤nı̣ ǰṳla̤ba̤ tṳnṳ tügn*yä tṳ*wa̤
(08) + xa̤[] *tṳ*[] *to*[go$^?$]*gun pügti*gči śı̣$_1$ñı̣n *bo*dısatva to̤ro̤x kagan
(09) [+]*l*[] + []*ı̣yṳ* uč biti$_1$*hi*$_1$*ñ* + + *g*ux *tṳ*wa̤-*ñ*a̤r kagan *to̤*ro̤x kaganun
(10) + pa̤da̤ *n*<ı̣$_1$>rı̣ kaga*n* **türüg** [ka]ga[n] []*ı̣ ǰı̣*n ubı$_1$ǰ ǰa̤*lo̤*ba̤ǰ darka*d* ǰa̤yabı̣$_1$
(11) [?]*rṳn* b*i*tig + s*ä*g p*ag* [+ +] j[] [?] darkan ba | tı̣ *b*a̤ ka

Tentative English translation of Alexander Vovin (2017c):
"of the inscriptions khagan and princes, new bodhisattva born
khagan, buddha lord's knowledge knowing country anakay
(title) promises the tribe officials stand seven times promises
...inscription stones saw tuwa ... to strike...joined
...khagan...queens and younger brothers niri khagan **Turk** khagan
reason dharma worshipped country erkin collect ...
enough those who realized khagan regnal year shone that enough tuwa
people...count... ... new bodhisattva born khagan
of the inscription...tuwa persons being cut from the khagan who will be reborn as a khagan
they followed niri khagan, khagan of **Turks** and ...directed ... free men were happy
official ... wrote this inscription ..."

Modified transcription and morphological[67] interpretation of Vovin 2018, 303–310
(01) *biti-ńe qaγan digi-n šińi-n bodi-satva törö-ks[e]*
"Inscription-PLUR qaγan die-CM new-GEN Bodhi-stva be.born-PAST.PART
(02) *qaγan buda qaγan-u uqa-qs[a] uqa-ǰu ksı̣rı̣ Ańaqay*
qaγan Buddha qaγan-GEN realize-PAST.PART realize-CC country Ańaqay
(03) *... -ıte-n ǰa-qs[a] bod-ı beg-ey-ńar bayyı-Ø dol-ǰa-ǰu hügbü + [?]*
[title-*iten*?] Vite-CM promise-PADT.PART tribe-ACC beg-?-PLUR be/stand-NP listen-COOP-CC ?
(04) *+b[i]ti jilo/nar q[a]ra-n[V]ya-γuń tuwa pṳro̤-r čeči-re pügtig ńele-n*
inscription stone-PLUR look-?-NML tribal.name sin(?)-NML stab-CF saved join-CM
(05) × *q[a]γa[nu?] + kato-ńar düge-d nīrı̣ qaγan* ***türüg*** *qaγan*
qaγa[n-GEN?] qatun-PLUR younger.brother-PLUR Niri qaγan **türk** qaγan-
(06) *-un d[ö]rö taya-ǰu ksı̣$_1$rı̣ hergin bar-γo[l] pa̤lksı̣$_1$_r [+]ksa̤-či hi$_1$gbi$_1$ǰ*
-GEN law worship-CC country title/people take-NML ?-NML ?-NA ?-PAST

67 Grammatical abbreviations used by Vovin: ACC accusative, CC converbum contemporale, CF converbum finale, CM converbum modale, CP converbum praeparativum, COOP cooperative, GEN genitive, IMP imperative, NA nomen actoris, NML nominalizer, NP nomen praesentis, PART participle, PAST past tense, PLUR plural, PRES present, SING singular.

(07) *tüg-ǰü uqa-ba-r-ńar qaγan ksan-ı ǰula-ba tün-ü tüš(i)-n[] tuwa*
be enough-CC realize-PST-NML-PLUR qaγan regnal.year-ACC shine(?)-PAST he-GEN entrust / support-ADN(?) tribal name
(08) *[]ıksą[] tų[] to[γo]-γun pügtig-či šińi-n bodi-satva törö-ks[A] qaγan*
? ? count-NML salvation-NA new-GEN Bodhi-satva be.born-PAST.PART qaγan
(09) *[+]l[] + []ki-yü un bitig-iń puγan tuwa-ńar qaγan törö-ks[e] qaγan-un*
? do-PRES ? inscription-GEN ? ? tribal.name-PLUR qaγan be.born-PAST.PART qaγan-GEN
(10) *[sina]pa-da Niri qaγan* ***türüg*** *qaγa[n] [k/g]iǰi-n ubi-ǰ ǰalo-ba-ǰ darqa-d ǰay bi-*
domain-LOC Niri qaγan **türk** qaγan approach / follow-CM ?-PST direct-PAST-PAST free.man-PLUR happy be-
(11) *-rün bitig [+] sA[] paγ [+ +] ǰ[] [?] darqa-n b[i]ti-be qa*
-CP inscription ? ? ? ? ? official-SING write-PST?

Old Turkic

The genuinely Turkic epigraphic evidence appears only in the earliest runiform inscriptions from the beginning of the 8th cent., namely on the **Toñuquq**-inscription, dated to AD 726 (Róna Tas; Rybatzki), see Aalto 1958, 30:

(1)
𐰴𐰋 : 𐰾𐰃𐰺𐰚𐰋 : 𐰚𐰋𐰺𐰚𐰇𐰾𐰋𐰆 : 𐰾𐰋𐰴𐰇𐰸 : 𐰇𐰇𐰾𐰆𐰚𐰉𐰺𐰚𐰴𐰸
𐰴𐰋𐰺𐰺𐰺𐰴𐰽 : 𐰚𐰇𐰇𐰾𐰋𐰆 :)𐰾𐰾𐰃𐰋𐰺𐰺

(2)
𐰴𐰃𐰇)𐰇 : 𐰴𐰴𐰋𐰋𐰾 : 𐰚𐰾𐰇𐰾𐰋𐰆 : 𐰇𐰸𐰾𐰇>𐰃𐰇𐰴)𐰇 :)𐰾>𐰃𐰋𐰺𐰴𐰴𐰋
𐰾𐰺𐰇𐰾𐰋𐰋𐰚 : 𐰴𐰺𐰇𐰋 : 𐰴×𐰋𐰇𐰴𐰚)𐰃 : 𐰚𐰇𐰇𐰾𐰆𐰚𐰉𐰆 : 1𐰾>𐰇𐰇𐰴)𐰇 :
: 𐰾𐰋𐰺𐰸)𐰇 :

(3)
𐰾𐰺𐰇𐰾𐰋𐰸𐰴 : 𐰴𐰺𐰇𐰋 : 𐰇𐰇𐰴𐰽×𐰋𐰇𐰴 : 𐰇×𐰋𐰇𐰴 : 1𐰾>𐰇 : 𐰇𐰇)𐰇
)𐰾>𐰃𐰺𐰴𐰇 : 𐰋𐰺𐰴𐰋 : 𐰴𐰼>𐰃𐰇𐰃 : 𐰴⊙𐰇𐰇𐰴𐰋𐰸𐰴 :)𐰾>𐰃𐰋𐰺𐰴𐰴𐰋 :
𐰚𐰋𐰇𐰴𐰺𐰸 :

(4)
𐰃𐰋𐰴𐰸𐰴𐰋𐰸 : 1)𐰸𐰃𐰇𐰇 : 𐰇𐰾𐰇𐰋 : 𐰚𐰾𐰸𐰆𐰚𐰾𐰴 : 𐰇𐰾𐰾𐰇𐰋𐰇𐰾𐰇𐰃
𐰴𐰋𐰸 : 𐰴𐰋𐰺𐰇𐰾𐰆 : 𐰴𐰆𐰸𐰴𐰺𐰴𐰸 : 𐰴𐰋𐰺𐰇𐰇𐰚 : 𐰴𐰆𐰸𐰴𐰇𐰚 : 𐰴𐰼𐰇
: 𐰆𐰴𐰴𐰚 : 𐰋𐰴𐰸

(5)
𐰾𐰋𐰺𐰋𐰸𐰸𐰴𐰾𐰇𐰆 : 𐰇×𐰴𐰋𐰇𐰇𐰆 : 𐰴𐰋𐰺𐰾𐰾 : 𐰴𐰇𐰇𐰃 : 𐰚𐰾𐰇𐰇𐰋𐰾𐰾𐰃
𐰃𐰇𐰸𐰇𐰃 : 𐰾⊙𐰇𐰼 : 𐰾×𐰋𐰇𐰴𐰆𐰸𐰸𐰸𐰾)𐰇𐰇 : 𐰇𐰇𐰃𐰃𐰆𐰚𐰆𐰆𐰃 :
𐰚𐰾𐰇𐰸𐰴 : 𐰴𐰇𐰇𐰃𐰆 𐰋𐰾𐰴 : 𐰴𐰇𐰇𐰃

(1) *bilgä toñuquq : bän özüm : tabɣač eliŋä : qïlïntïm :* ***türk*** *bodun : tabɣačqa : körür ärti :*
(2) ***türk*** *bodun : qanïn bulmayïn : tabɣačda : adrïltï : qanlantï : qanïn qodup : tabɣačqa : yana ičikdi: täŋri: anča tämiš ärinč : qan bärtim :*
(3) *qanïŋïn : qodup : ičikdiŋ : ičikdük üčün : täŋri: öl tämiš ärinč :* ***türk*** *bodun : ölti alqïntï : yoq boltï:* ***türk*** *: sir bodun : yärintä :*
(4) *bod qalmadï : ïda tašda : qalmišï : qubranïp : yäti yüz boltï : äki ülügi : atlïy ärti : bir ülügi : yadaɣ ärti : yäti yüz : kišig :*
(5) *uduzuɣma : uluɣi : šad ärti : yïɣïl tedi : yïɣmišï bän ärtim : bilgä toñuquq : qaɣan mu qïsayïn tädim : saqïntïm : turuq buqalï : sämiz buqalï : ïraqda :*
Rybatzki 1997, 43–44

(1) Ich, Bilgä Toñuquq, wuchs als [Untertan] Chinas, [zur Zeit als] die **Türk**-Klane den Chinesen dienten, auf.
(2) [Da die] **Türk**-Klane ihren Herrscher nicht bekommen konnten, trennten sie sich von den Chinesen und nahmen sich einen Herrscher. [Dann aber] verließen sie ihren Herrscher und unterstellten sich erneut den Chinesen.
(2–3) Täŋri aber sagte: "Ich gab [dir] einen Herrscher, du aber hast deinen Herrscher verlassen [und] dich [erneut] unterworfen". Weil [du dich] unterworfen hast, hat Täŋri gesagt "Sterbe!" [Und] die **Türk**-Klane starben, gingen zugrunde und wurden vernichtet.
(3–4) Im Land der **Türk**-Sir-Klane blieb kein Klan zurück.
(4) [Die] in der Halbwüste verblieben waren, versammelten sich und wurden 700 [Mann stark]. 2/3 [der Männer] waren beritten, 1/3 war zu Fuß.
(4–5) Der Anführer der 700 Männer war ein Šad.
(5) "Versammle [die Männer]!" sagte er. Der sie versammelte war ich, Bilgä Toñuquq.
Rybatzki 1997, 75–79

(1) Ich, der weise Toñuquq, war selbst für die Tabɣač-Herrschaft geschaffen. Das Türk-Volk war dem Tabɣač gehorchend.
(2) Türk-Volkes Qan nicht geziemen wollend (?), vom Tabɣač trennte sich, nahm sich einen Qan. Den Qan aufgegeben habend zu dem Tabɣač zurückkehrend unterwarf sich. Der Täŋri sagte so 'Einen Qan gab ich.
(3) Deinen Qan verlassen habend hast du dich unerworfen.' Der Täŋri teilte (es), das Türk-Volk starb, wurde vernichtet. Im Lande des Türk-Sir-Volkes
(4) keine Körperschaft blieb zurück. Die auf Stock und Stein (?) Gebliebenen sich vereinigt habend, sieben hundert wurden. Zwei Teile von ihnen waren zu Pferde. Ein Teil von ihnen war zu Fuss. Der die siebenhundert Leute
(5) führende Vorgesetzte war der Šad. 'Schliess dich an' sagte er. Der sich Anschliessende war ich, der weise Toñuquq. 'Will ich ihn zum Qaɣan zwingen?' sagte ich. Ich dachte nach. 'Ob ein magerer Stier, ob ein fetter Stier, im voraus....'
Aalto 1958, 30–31

4.1.2. Etymology

4.1.2.0. The first etymological attempt probably appeared in two Chinese chronicles[68], both finished in AD 636:
'Book of Zhou'[69]
"They lived on the south side of the Golden Mountains (金山 *jīn*[70] *shān*[71]; probably the Altai Mountains – cf. Chavannes 1903, 14, 24, 26, 33, 54, 85, 86, 96, 307, 338; Pengling 2018, 40) and were smiths of the Ruru (茹茹 *Rúrú*[72]) people. The Golden Mountains are similar to a helmet (兜鍪 *dōu*[73] *móu*[74]), in their colloquial language called 突厥 *tū jué*, and for this reason it became their name."

'Book of Sui'[75]:
Ancestors of the Tujue (突厥 *tū jué*) were various barbarians (胡 *hú*) from Pingliang (平涼 *Píngliàng*). Their clan name was Ashina (阿史那 *Ā*[76] *shǐ*[77] *nà*[78]*). When the emperor Taiwu*[79] *(*太武 *Tài wǔ*; reign 424–452) from the Northern Wei (北魏 *Běi Wèi*) dynasty

68 Both passages were translated by Ondřej Srba.
69 周書 *Zhōu Shū*: juan 50, section *Liezhuan* 42, chapter *Yiyu xia*: 居金山之陽，為茹茹鐵工。金山形似兜鍪，其俗謂 兜鍪為「突厥」，遂因以為號焉。
70 金 *jīn* „gold, metal, hard" < Late & Early Middle Chinese **kim* (Pulleyblank 1991, 156) ~ Middle Chinese **kim* < Postclassic Chinese **kim* (cf. Vietnamese reading *kim*) < Han Chinese **kəm* < Classic & Preclassic Old Chinese **kəm* (*GSR* 0652 a-c; Starostin, *ChEDb*).
71 山 *shān* „mountain" < Middle Chinese **ʂɐn* < Late & Middle Postclassic Chinese **ʂɑn* < Early Postclassic Chinese **ʂān* < Han Chinese **ʂān* < Classic & Preclassic Old Chinese **srān* (*GSR* 0193 a-c; Starostin, *ChEDb*).
72 Also called 柔然 *Róurán*, 蠕蠕 *Ruǎnruǎn*. <https://en.wikipedia.org/wiki/Rouran_Khaganate>
73 兜 *dōu* „helmet; pocket, bag" < Late & Early Middle Chinese **təw* (Pulleyblank 1991, 81) ~ Middle Chinese **tʌw* < Late & Middle Postclassic Chinese **tɔ̄w* < Early Postclassic Chinese **tōw* < Han Chinese **twā* < Classic & Preclassic Old Chinese **tō* (*GSR* 0117 a; Starostin, *ChEDb*).
74 鍪 *móu* „ancient cooking vessel; helmet" < Late Middle Chinese **məw* < Early Middle Chinese **muw* (*GSR* 1109 o; Pulleyblank 1991, 219).
75 隋書 *Suí Shū*: juan 84, section *Liezhuan* 49, chapter *Bei Di / Tujue*: 突厥之先，平涼雜胡也，姓阿史那氏。後魏太武滅沮渠氏，阿史那以五百家奔茹茹，世居金山，工於鐵作。金山狀如兜鍪，俗呼兜鍪為「突厥」，因以為號。
76 阿 *ā & ē* „slope, hill, shore" < Late Middle Chinese **ʔa* < Early Middle Chinese **ʔa* (Pulleyblank 1991, 23, 86) ~ Middle Chinese **ʔâ* < Postclassic Chinese **ʔā* < Eastern Han Chinese **ʔā* < Western Han Chinese **ʔāj* < Classic & Preclassic Old Chinese **ʔāj* (*GSR* 0001 m; Starostin, *ChEDb* 2005) ~ Middle Chinese **ʔa* < Old Chinese **qˤa[j]* (Baxter & Sagart, *OChDb* 2014).
77 史 *shǐ* „secretary, scribe, recorder; history" < Late Middle Chinese **ʂɣ'* < Early Middle Chinese **ʂɨ'*/**ʂi'* (Pulleyblank 1991, 282) ~ Middle Chinese **ʂɨ́* < Postclassic Chinese **ʂɨ́* < Han Chinese **ʂə́* < Classic Old Chinese **srə́* < Preclassic Old Chinese **srəʔ* (*GSR* 0975 a-f; Starostin, *ChEDb*) ~ Middle Chinese **sriX* < Old Chinese **s-rəʔ* (Baxter & Sagart, *OChDb* 2014).
78 那 *nǎ & nà* „to be rich; that, this" < Late Middle Chinese **na' & *na`* < Early Middle Chinese **na'* & **naʰ* (Pulleyblank 1991, 221) ~ Middle Chinese **nâ* < Postclassic Chinese **n(h)ān* < Han Chinese **n(h)ān* < Classic Old Chinese **n(h)ān* < Preclassic Old Chinese **n(h)ār* (*GSR* 0350 a; Starostin, *ChEDb* 2005) ~ Middle Chinese **na* < Old Chinese **nˤar* (Baxter & Sagart, *OChDb* 2014).
79 Known also under the nickname 佛貍 *Fólí*, which can be projected in Eastern Han Chinese **bwətrhə*

destroyed the clan 沮渠 *Jǔqú*[80] in AD 439, the clan Ashina consisting of 500 families fled to Ruru. For generations the Ashina lived in the Golden Mountains (金山 *jīn shān*) and manufactured iron. The Golden Mountains resemble a helmet (兜鍪 *dōu móu*), colloquially (俗 *sú*) the helmet is called 突厥 *tū jué* here, and from it their {= descendants of the Ashina clan} designation originated (cf. also Németh 1927, 276; Kononov 1949, 40–41; Bičurin I, 221; Doerfer, *TMEN* II, 489–90).

The name of the clan Ashina (阿史那 *Āshǐnà*) was pronounced by Pulleyblank as **ʔaʂɨ'na'* or **ʔaʂi'na*^{h} in Early Middle Chinese or by Starostin **ʔâṣɨ́nâ* in Middle Chinese, i.e. in the end of the 6th cent. CE. It is more or less generally accepted that this name is of Iranian origin, where the closest counterpart appears in Khotanese *āṣṣeiṇa-* "blue"[81]. Some scholars identify this clan-name in a Bugut inscription written in Sogdian: *tr-'wkt ''šyn's = Turkut Ašinas*. The meaning "blue"[82] corresponds to the first component of the ethnonym *Kök-Tür(ü)k*, known already from the Old Turkic inscriptions[83] (Golden 2006, 24; 2011, 46–47 with older literature).

Schott (1849, 12) tried to determine the origin of this legendary 'helmet' in Persian *tark*, *targ*[84] "helmet" (Steingass 1892, 296, 297) or in some of the Mongolic forms as Middle Mongol *du'uluqa* [HY 19], *dǎwulɣa* [MA], Written Mongol *daɣulɣa*[85], *duɣulɣa* (Lessing

(Starostin). This reconstruction may reflect the Turkic designation of „wolf", reconstructed by Doerfer 1971, 295, as **bō̄rē* (see below), cf. 佛 *fó* „(to be) great; resist, oppose" < Early Middle Chinese **but* (Pulleyblank 1991, 96) ~ Middle Chinese **büt* < Postclassic Chinese **bwɨt* < Eastern Han Chinese **bwət* < Western Han Chinese **bət* < Classic & Preclassic Old Chinese **bət* (*GSR* 0500l; Starostin, *ChEDb*); 貍 & 狸 *lí* „wild cat; spotted" < Early Middle Chinese **lɨ/*li* (Pulleyblank 1991, 96) ~ Middle Chinese **lɨ* < Postclassic Chinese **lhɨ* < Han Chinese **rhə* < Classic & Preclassic Old Chinese **rhə* (*GSR* 0978 h-i; Starostin, *ChEDb*).

80 A ruling clan of the Xiongnu state Northern Liang 北涼 *Běi Liáng*; the clan took shelter in Gaochang, where the ruler Juqu Anzhou (沮渠安周 *Jǔqú Ānzhōu*) was killed after the attack of the Rouran tribe in 460.

81 Iranian **axšai̯na-* > Avestan *axšaēna-* „blue", Old Persian **axšaina-* „color of turquoise" (transcribed in Elamite *ak-še-*[*na*], Aramaic *'hšyn-*), Scythian or Sarmatian Πόντος ἄξεινος (Pindar, *Pythian Odes* 4.263 [462 BC]; but in *Nemean Odes* 4.49 he used Εὔξεινος Πόντος) ~ Persian *zray-i-Xašēn*, Khotanese *āṣṣeiṇa-* „blue", besides *aṣṣänaka* „pigeon", Sogdian *'γs'yn'k*, *'γs'ynh*, *'γs'yn'y* „green", Zoroastrian Pahlavi *xšyn /xašēn/* „(dark) blue", Persian *xašīn* id., Kurdic *šīn & hēšīn* „blue, green", Ossetic Digor *æxsinæg* „pigeon", *æxsinçæ* „plum", Yidgha *axšın* „blue", Šughni *x̌īn* „blue, grey, green", Sarikoli *x̌ayn* „blue", Yazghulami *šin* „blue, grey", Ormuri *ṣīn*, Pashto *šīn*, f. *šna* „blue, green" (Abaev I, 220; Bailey 1979, 26, 12; Cabolov II, 324; *ESIJ* 1, 284–86; MacKenzie 1971, 94; Rüdiger Schmitt. 1989. Black Sea. In: *Encyclopedia Iranica* Vol. IV, Fasc. 3, 310–313. <http://www.iranicaonline.org/articles/black-sea>).

82 Thomsen 1930a, 864: *Kök-Türk* = 'Blue Türks', translated by E. Denison Ross.

83 Kultegin inscription A3: 𐰴𐰇𐰏𐰃:𐰃𐰇𐰏 (read from right to left) *Kök Türük* <http://bitig.org/?lang=e&mod=1&tid=1&oid=15&m=1>
Bilge Kagan inscription A4: 𐰃𐰏𐰇𐰴:𐰄𐰇𐰄 <http://bitig.org/?lang=e&mod=1&tid=1&oid=16&m=1>

84 Cf. Middle Persian [Zoroastrian Pahlavi] *tlg /targ/* "helmet" (MacKenzie 1971, 82; Bartholomae 1904, c. 1572).

85 Common Mongolic **daɣulga* „helmet" > Khalkha *dūlga*, Buryat *dūlga*, Kalmyk *dūlɣə*, *dūlxə*, Ordos

1960, 271). Let us mention that in Modern Chinese "helmet" is called 兜盔 *dōu*[86] *kuī*[87] < Early Middle Chinese **təwkʰwəj* (Pulleyblank). Naturally, the ethnonym *Türk / Tūjué* and the Chinese word for "helmet" are different in all stages of their development. The Mongolic term **daɣulga* "helmet" is also apparently different. In the case of Classical & Middle Persian *targ* "helmet", the difference in the root vowel may be overcame only with mediation of such a language, where the change *a* > *u* is characteristic. It could be a language of a Bulgar-Čuvaš type, cf. Middle Turkic *tartyγ* "Sattelgurt, Kazan Tatar *tartky* "Bauchriemen" vs. Čuvaš *turDa*, *torDa* "Femerstange" (Räsänen 1969, 465).

Németh (1927), Kononov (1949) and Doerfer (*TMEN* II, 491f) summarized most of relevant etymological attempts (arranged in chronological order):

4.1.2.1. Vambéry (1879, 52) derived[88] the ethnonym from the Turkic verb **törü-*[89] "to be born, originate, come in existence". Although it is semantically acceptable, his solution implies the chain of changes **törü-k* > **türük* > **türk*, which are not quite regular according to Doerfer (*TMEN* II, 402). Concerning the final *-k*, it looks like the nominal suffix forming deverbal nouns, e.g. Old Turkic *artuq* "surplus" from *art-* "to increase" (Kononov 1980, 89; Sevortjan 1974, 181–82; Räsänen 1969, 27). But there is also another candidate, forming nouns of denominal origin, cf. e.g. Kazakh *kürt* "hochaufgestürmter Schnee" vs. *kürtük* "frischgefallener Schnee", Old Uyghur *körtük* "Schneehaufen, Schneewüste" (Räsänen 1969, 311). The vocalic vacillation has analogy e.g. in Middle Turkic [Kutadɣu Bilig] *börk* "Mütze", Osman Turkish *bürk* vs. Kazakh *börük*, Khakas *pörik* "eine Mütze aus Lammfell" (Räsänen 1969, 84).

4.1.2.2. Le Coq (1912, 149–153) explain *Türk* from the appellative *türk*, which should mean "might, power" (cf. also Németh 1927, 275–81). It is accepted by Doerfer

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dūlGa (*EDAL* 389; Ramstedt 1935, 104; Ščerbak 1997, 203: Mongolic > Čaghatai *davulɣa*, *dubulɣa*, *duvulɣa*, *duluɣa*, besides *tovulɣa*, Osman *dulɣa* vs. *tulɣa & tuγulɣa* – see Doerfer, *TMEN* II, 490).

86 兜 *dōu* „helmet; pocket, bag" < Late & Early Middle Chinese **təw* (Pulleyblank 1991, 81) ~ Middle Chinese **tʌw* < Late & Middle Postclassic Chinese **tə̄w* < Early Postclassic Chinese **tōw* < Han Chinese **twā* < Classic & Preclassic Old Chinese **tō* (*GSR* 0117 a; Starostin, *ChEDb*).

87 盔 *kuī* < Late Middle Chinese **kʰuaj* < Early Middle Chinese **kʰwəj* (Pulleyblank 1991, 177).

88 ... allerdings eine specielle Bezeichnung fur Homo, namlich das Wort *türk* von *törük* oder *türük* (vgl. §. 179), folglich „Geschopf", „Mensch" im allgemeinen. (Vgl. *töröngö'ï* = „Mensch, Geschopf" im Altaischen, namentlich in der von Radloff gebrachten Mythe über die Welterschaffung, Bd. 1, S. 159.). Das Wort war daher vorhanden und später ist die Bezeichnung für Mensch auf Nation übertragen worden und das Verhaltniss zwischen *türk* und *töre* „erzeugen, hervorbringen" findet ein analoges Beispiel im lat. *natio*, im slaw. *rod* „Geschlecht" und *rodit* „erzeugen", magy. *nemzet* „Nation" und *nemzeni* „erzeugen" und schliesslich auf dem türk. Sprachgebiete selbst, wo cag. *tire* Stamm, alt. *törö* Geschlecht, jak. *törül* „Abkunft" bedeutet.

89 **törü-* „to be born, originate, come in existence" > Old Turkic [Orkhon], Old Uyghur *törü-*, Karakhanid *törü-* [Mahmud of Kašghar; Qutadɣu Bilig], Middle Turkic *törü-*, Čaghatai *törü-/töre-*, Yakut, Dolgan *törō̄-*, Tuva *törü-*, Tofalar *dörü-*, Khakas *törə-*, Oyrat *törö-*, Kirghiz *törö-*, Karaim *töre-*, Azerbaijani *törä-*, dial. *törü-*, Turkmen, Karakalpak *döre-*, besides Tatar *türä-* (dial.), Turkish *türe-*, dial. *dürü-* id. (Räsänen 1969, 495; *DTS* 582; Clauson 1972, 533; Sevortjan 1980, 283–84).

(*TMEN* II, 491), who says 'Diese Etymologie ist m.E. die einzige mögliche'. On the other hand, Clauson (1962a, 87; 1962b, 99–101; 1972, 542–43) rejected it with the argument that the word *türk* (or *törk*), known in its appellative sense only from Old Uyghur and Karakhanide (by Mahmud of Kašghar), maybe also Čaghatai *türk* "brave and rough" (Räsänen 1969, 506), was never used in the meaning "strong" or "strength", but "ripeness" (of fruit) or "maturity" (of men). But Doerfer (*TMEN* II, 493) very energetically held his position that *türk* in formulations *türk burχanlar* or *ärk türk* meant "might, strong".

4.1.2.3. Blochet (1915, 306) saw the origin of the ethnonym *Türk* in the Avestan name of the steppe race *Tŭ̌ra-*, described as a tribe of riders:

> *yaţ mąm tura pazdaiiianta / āsu.aspa naotaraca* [Yašt 17.55 = 56]
> "als die Turer mit schnellen Rossen und die Naotariden mich verscheuchten, ..."
> (Bartholomae 1904, c. 656; Wolff 1910, 282)

But Blochet did not explain the final velar in *Türk*. It is missing also in the Middle Persian (Zoroastrian Pahlavi) counterpart *twl /Tūr/* "one of a people inimical to Erān" (MacKenzie 1971, 84; Bartholomae 1904, c. 656), although the Middle Persian equivalents have frequently been expanded with a velar suffix, cf. Young Avestan *taera-* "Bergspitze, Gipfel" [Yasna 42.3; Yašt 15.7; 19.6] ~ Middle Persian *tērak* (Bartholomae 1904, c. 623) = *tylk /tērag/* (MacKenzie 1971, 83).

4.1.2.4. Kononov (1949, 44) thought that the ethnonym was shortened from such forms as Old Uyghur *bir türgün* "as a single coherent whole", Karakhanid *türgün* "a tribal community; the house of one's parents", Taranči *türgün*, Kirgiz *törkün*, Kazakh, Karakalpak, Nogai *törkin* "a wife's parents and kindred, her parental home", Čaghatai *turkan*, Khakas *törgĭn*, Yakut *törküt* "приезд новобрачной родственникам и друзьям", Oirot, Teleut *töröγön* "der Verwandte, Blutsverwandte" (Räsänen 1969, 494; Clauson 1972, 545). The component *gün / kün*, grammaticalized in the suffix *-gün / -kün*, appears also in various other formations, e.g. Karakhanid [Kutadγu Bilig] *ęl kün* "people", Old Uyghur (14th cent.) *ęlgün* "mankind", Čaghatai [Bābur] *ęlgün* "people, retinue", vs. Common Turkic **ēl* "people, nation" (Clauson 1972, 121–22; Räsänen 1969, 39), or Old Turkic *keliŋün-im* "my younger brothers wives" vs. Old Uyghur, Karakhanid etc. *kelin* "bride" (Clauson 1972, 719), with the collective function (Kononov 1980, 117, 147). Kononov (1949, 44) judged that it has its origin in the appellative attested in Old Uyghur *küni* "jealousy", Karakhanid *küni* "co-wife", Middle Turkic *küni* "co-wife; jealousy", Turkish *gönü*, *günü* id., Azerbaijani *günü*, Turkmen *güni* "co-wife" etc. (Räsänen 1969, 307, 309; Clauson 1972, 727). The first component should be connected with Old Turkic *törü* "traditional law", Karakhanid *törü* "customs" etc. (Clauson 1972, 531–32; Räsänen 1969, 495) or Old Turkish, Karakhanid *tōr* "place of honor in a house" (Clauson 1972,

528–29; Räsänen 1969, 494) according to Kononov, although the primary semantics is not clear.

4.1.2.5. As a new solution may be offered the etymology based on mythological tradition recorded by Chinese chroniclers, connecting the ancestors of the Turkic people with "wolf" (cf. also Clauson 1964; Sinor 1982):

Zhoushu[90] (周書)
"Tujue (突厥 *tū jué*) are one of the branches of Xiongnu, their clan name is Ashina (阿史那). They separated themselves as an independent tribe. Later they were destroyed by a neighboring state, which exterminated their clan. There was one boy, around ten years old. With respect to his youth soldiers were not able to kill him, but they cut his legs and threw him into a grassy pool. Some she-wolf (牝狼 *pìn láng* "female wolf") nursed him with meat. When he was mature, he coupled with the she-wolf and she became pregnant. After that the she-wolf fled into the mountains north of Gaochang. In the mountains there was a cave and in the cave there was a plain overgrown by dense grass. Its area was several hundred li, mountains surrounded it from four sides. The she-wolf hid there and gave birth to ten boys. When ten boys grew up, they brought wives from outside and begot their descendants. After that everybody formed their clan, and Ashina is one of them. Their descendants reproduced and gradually reached the number of several hundred households. After several generations they left the cave and became vassals of the Ruru tribe."[91]

"For weapons they have bows, arrows with swishing points, armors, lances, knives, swords. They attach metallic wolf's heads on the upper end of banners. Soldiers (士 *shì*) of the ruler's military retinue (侍衛 *shì wèi* "imperial bodyguards") were called *fùlí* (附離). They also name them "wolves" (狼 *láng*), since they were originally born from "wolves" and do so to not forget on their past."

90 Linggu Defen (author), Yang Jialuo (editor). Zhoushu 周書: Section Liezhuan 列傳, juan 42四, chapter Foreign countries Yiyu異域下 – Tujue 突厥. Taibei: Tingwen shuju, 1980, pp. 909–910: 兵器有弓矢鳴鏑甲稍刀劍，其佩飾則兼有伏突。旗纛之上，施金狼頭。侍衛之士，謂之附離，夏言亦狼也。蓋本狼生，志不忘舊。We are grateful to Ondřej Srba for detailed information about this passage and its translation.

91 突厥者，蓋匈奴之別種，姓阿史那氏。別為部落。後為鄰國所破，盡滅其族。有一兒，年且十歲，兵人見其小，不忍殺之，乃刖其足，棄草澤中。有牝狼以肉飼之，及長，與狼合，遂有孕焉。彼王聞此兒尚在，重遣殺之。使者見狼在側，並欲殺狼。狼遂逃于高昌國之北山。山有洞穴，穴內有平壤茂草，周回數百里，四面俱山。狼匿其中，遂生十男。十男長大，外託妻孕，其後各有一姓，阿史那即一也。子孫蕃育，漸至數百家。經數世，相與出穴，臣於茹茹。

It is more or less generally accepted that the term 附離 *fù*[92] *lí*[93] meant directly "wolf" in the original language (cf. Bičurin 1950, 221, first published in 1851). Let us project the word into earlier stages of its Chinese historical pronunciation: Middle Chinese **bù̀le* < Postclassic Chinese **bòle* < East Han Chinese **bohre*. It means that according to reconstruction of chronology of development of Chinese by Starostin, around 200 CE the Chinese transcription could reflect original **bōre* in a donor-language. Its similarity to the Turkic designation of "wolf" is more than striking: Turkic **bo͞rē* (Doerfer 1971, 295) ~ **bo͞rü* (*EDAL* 343–44) "wolf" > Old Turkic *böri* [Orkhon, Yenisei], Old Uyghur *böri*, Karakhanid *böri* [Mahmud of Kašghar; Kutadγu Bilig], Čaghatai *böri*, Uzbek *bọri*, Uyghur *böri*, Kazakh *böri*, Karakalpak *böri*, Nogai *böri*, Khalaj *bīeri*, Tatar *büre*, Baškir *büre*, Turkmen *bo͞rü*, Kirghiz *börü*, Turkish *börü* (dial.), Tofalar *börü*, Oyrat *börü*, Balkar *börü*, Karaim *börü*, Kumyk *börü*, Tuva *börü*, dial. (Todžin) *börük*, Yakut & Dolgan *börö*, Sary-Yughur *böji*, besides *peri*, Salar *püŕe*, Šor *pörü*, Khakas *pu͞r*, Čuvaš *pirə* (Clauson 1972, 356; Räsänen 1969, 84; *TMEN* II, 333; Sevortjan 1978, 219–221).

Very interesting is the Kazakh compound *böl-türük* "young of wolf / волчонок". Räsänen (1969, 84) judged that it was dissimilated from **bör-türük*, where the first component corresponds to Kazakh *böri* "wolf". It is tempting to derive the second component from the verb **törü-* "to give birth" (Räsänen 1969, 495; *DTS* 582; Clauson 1972, 533; Sevortjan 1980, 283–84), although it is not directly attested in Kazakh. But there is an alternative: an Iranian origin with respect to Manichaean Middle Persian *twrw /torrō/* "young dog" (Durkin-Meisterernst 2004, 331), Zoroastrian Middle Persian *twlk /tōrag/*, Persian *tōra* "jackal" (MacKenzie 1971, 83), Baluchi *tōlag* "jackal", Larestani *tōra*, Gabri *tōrē* id., Kurdish Kurmanji *t́ūla*, Sorani *tula* "cub, puppy" etc. (Cabolov II, 419; Horn 1893, 90, #403). The Mongolic forms like Written Mongol *beltereg*, Khalkha *beltreg*, Buryat *belterge*, Kalmyk *beltərəg* "young of wolf" (*EDAL* 343) look like Turkic borrowings. In any case, the compound should mean "born from wolf" or "young of wolf". And just this formation **bör-türük* "descendant of wolf", shortened to **tür(ü)k*, could change into the ethnonym **Türk* independently of the origin of **türük*.

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92 附 *fù* „to attach, append, adhere to, adjoin, be added to, stick to; near, close" < Late Middle Chinese **fɦjyð/*fɦuð* < Early Middle Chinese **buðʱ* (Pulleyblank 1991, 101) ~ Middle Chinese **bù̀* < Postclassic Chinese **bò* < Han Chinese **boh* < Classic Old Chinese **boh* < Preclassic Old Chinese **bo(ʔ)s* (*GSR* 0136 k; Starostin, *ChEDb*) ~ Middle Chinese **bjuH* < Old Chinese **N-p(r)oʔ-s* (Baxter & Sagart, *OChDb*).

93 離 *lí* „to leave, be separated from; meet with, encounter" < Late Middle Chinese **li* < Early Middle Chinese **liă/*li* (Pulleyblank 1991, 187) ~ Middle Chinese **le* < Postclassic Chinese **le* < Eastern Han Chinese **re* < Western Han Chinese **raj* < Classic & Preclassic Old Chinese **raj* (*GSR* 0023 f; Starostin, *ChEDb*) ~ Middle Chinese **lje* < Old Chinese **[r]aj* (Baxter & Sagart, *OChDb*). Note: Regular Sino-Vietnamese counterpart is *ly*. Vietnamese also has *rò ʻi* „to be separated, separate" – probably a more archaic loan from the same source.

Suishu

"People also said that originally their territory was west of the Western Sea[94] (西海 *xīhǎi*). They were destroyed by the neighboring state, men, women, small or big, all were killed off. Finally only one boy remained. The raiders were not able to kill him, so they cut off his legs and hands and threw him in a big water hole. Some she-wolf brought him meat in her teeth and nursed him, and so it became, the boy did not die. Later he coupled with the she-wolf and she became pregnant. People from that neighboring state again sent men to kill the boy. When they saw the she-wolf beside him, they wanted to kill her too, but the she-wolf, as if with help of some supernatural power, suddenly transferred to the east of the sea and stopped on a mountain. That mountain was northwest of Gaochang[95], and under it there was a cave. The she-wolf crawled into it and found a plain with rich grass, with an area of more than 200 li. After that the she-wolf gave birth to ten men. One of them was Ashina. Being wisest, he was made a ruler. Over the entrance gate {of his camp} he lifted up banners with a wolf's head, so as not to forget their origin."[96]

4.2. Ethnonym Mongol

4.2.1. Primary sources

Chinese

Among 200 volumes of the 'Old Book of Tang' (舊唐書 *Jiù Tángshū*), compiled in 941–945, the last seven ones were devoted to the populations living in the neighborhood of the Tang Empire. In the book 199 the nation 蒙兀 *méng*[97] *wù*[98] was mentioned

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94 In Chinese historical geography there were several candidates among Central Asiatic lakes for the designation 'Western Sea', namely the lakes Tsinghai, Lop Nor, Bostany, Balkhash. The term 北海 *Běi hǎi* belonged to the Lake Baikal (cf. Chun-shu 2007, 264). With regard to the position of the Golden (= Altai) Mountains, it seems, the Lake Balkhash was meant.

95 高昌 *Gāochāng*; Old Uyghur *Qočo* – *c*. 30 km in southeast from Turfan in Xinjiang.

96 隋書 *Suí Shū*: juan 84, section *Liezhuan* 49, chapter *Bei Di / Tujue*: 或云，其先國於西海之上，為鄰國所滅，男女無少長盡殺之。至一兒，不忍殺，刖足斷臂，棄於大澤中。有一牝狼，每啣肉至其所，此兒因食之，得以不死。其後遂與狼交，狼有孕焉。彼鄰國者，復令人殺此兒，而狼在其側。使者將殺之，其狼若為神所憑，欻然至於海東，止於山上。其山在高昌西北，下有洞穴，狼入其中，遇得平壤茂草，地方二百餘里。其後狼生十男，其一姓 阿史那氏，最賢，遂為君長，故牙門建狼頭纛，示不忘本也。

97 蒙 *méng* „to cover, darken; молодой, неопытный; детский; 2) невежественный, темный; *вежл.* я, мой; 3) неясный, скрытый; 4) получить от высшего, удостоиться; 5) получить, подвергнуться; 6) пренебрегать; рисковать; 7) покрывать; обернуть; заворачивать; 8) [*méng mēng*] обманывать, дурачить; одурманить; одуряющий"; [*měng mēng*] „Mongolia; Mongolian" < Late Middle Chinese **muǒŋ* < Early Middle Chinese **muwŋ* (Pulleyblank 1991, 211) ~ Middle Chinese **muŋ* < Late Postclassic Chinese **mwōŋ* < Middle & Early Postclassic Chinese **mōŋ* < Han Chinese **mōŋ* < Classic

as a part of the confederation called 室韋 *Shìwěi*[99] (cf. Kam Tak-sing 2017, 183). The record 室韋 *shì*[100] wěi[101] reflects the Late Middle Chinese pronunciation **ʂityj* < Early Middle Chinese **ɕitwuj*. There are at least two candidates in the Mongolic lexicon for lexemes which could be transcribed in this way, (a) for the younger one, (b) for the older one: (a) **siro-* "earth" > Written Mongol *siraɣu*, *siruɣa(i)*, *siroi* (Lessing 1960, 719), Middle Mongol *šira'u* [HY], *širo'ai* [SH], *širu* [IM], Khalkha *šorō*, *šoroj*, Buryat *šorōj*, Kalmyk *šorā̈*, *šorā* (Ramstedt 1935, 365), Ordos *šorō*, Dongxian *šəura*, Bonan *širo*, *śiru*, Dagur *širō*, Šira-Yughur *šərū*, Monguor *śirū* (*EDAL* 1269; Smedt Mostaert 1933, 400); (b) **čirgaj* "dense, tall (forest)" > Written Mongol *čiryai* (Lessing 1960, 192), Khalkha *čargaj*, Buryat *šereŋgi* "thin growth, pinery", Kalmyk *čirɣā* "dense (branches); a k. of tree or bush" (Ramstedt 1935, 442; *EDAL* 393). The ethnonym 蒙兀 *méngwù* may be projected into Late Middle Chinese **muǎŋŋwət* < Early Middle Chinese **muwŋŋut* (Pulleyblank) ~ **muŋŋot* (Starostin) ~ **muwngngwot* (Baxter & Sagart), where the final **-t* represents a frequent substituent for a foreign final liquid.

In the 'New Book of Tang' (新唐書 *Xīn Tángshū*), compiled in 1044–1060, this population was recorded as 蒙瓦 *méng wǎ*[102] < Late Middle Chinese **muǎŋŋwa:'* < Early Middle Chinese **muwŋŋwaɨ'*/**ŋwɛ:'* (Pulleyblank) ~ Middle Chinese **muŋŋwɻ́* (Starostin) ~ **muwngngwot* (Baxter & Sagart). Interesting is the Eastern Han Chinese pronunciation **mōŋŋhrwə̄́* by Starostin, dated to c. AD 200 – 0, resembling such ethnonyms as Mangghuer / Monguor.

& Preclassic Old Chinese **mōŋ* (Starostin, *ChEDb*; *GSR* 1181 a). Baxter & Sagart (2014): Middle Chinese **muwng* < Old Chinese **mˤoŋ*.

98 兀 *wù* „high and level; eminent; treeless" [Han]"; used also for a homonymous word **ŋ(h)ūt* „to cut off, shorten (limbs, etc. – e.g. in punishment)" < Late Middle Chinese **ŋut* < Early Middle Chinese **ŋwət* (Pulleyblank 1991, 211) ~ Middle Chinese **ŋot* < Postclassic Chinese **ŋ(h)wə̄t* < Han Chinese **ŋ(h)wə̄t* < Classic Old Chinese **ŋ(h)wə̄t* < Preclassic Old Chinese **ŋ(h)ūt* (Starostin, *ChEDb*; *GSR* 0487 a). Baxter & Sagart (2014): Middle Chinese **ngwot* < Old Chinese **[ŋ]ˤut*.

99 Cf. https://en.wikipedia.org/wiki/Shiwei .

100 室 *shì* „house, hall" < Late Middle Chinese **ʂit* < Early Middle Chinese **ɕit* (Pulleyblank 1991, 285) ~ Middle Chinese **śit* < Late Postclassic Chinese **śit* < Early & Middle Postclassic Chinese **ćit* < Eastern Han Chinese **ćət* < Western Han Chinese **tjət* < Classic & Preclassic Old Chinese **tit* (Starostin, *ChEDb*; *GSR* 0413 j-l).

101 韋 *wéi* „dressed hide, leather" < Late Middle Chinese **yj* < Early Middle Chinese **wuj* (Pulleyblank 1991, 320) ~ Middle Chinese **wɨj* < Postclassic Chinese **w(h)ɨ* < Han Chinese **w(h)əj* < Classic & Preclassic Old Chinese **w(h)əj* (Starostin, *ChEDb*; *GSR* 0571 a-c).

102 瓦 *wǎ* „roof tile; 1) черепица; изразец; глиняные (гончарные) изделия; фаянс; 2) конек крыши; крыша; гребень щита; 3) вразброд, врассыпную" < Late Middle Chinese **ŋwa:'* < Early Middle Chinese **ŋwaɨ'*/**ŋwɛ:'* (Pulleyblank 1991, 316) ~ Middle Chinese **ŋwɻ́* < Postclassic Chinese **ŋhwɻ́* < Eastern Han Chinese **ŋhrwə̄́* < Western Han Chinese **ŋhrwə́j* < Classic Old Chinese **ŋhrwə́j* < Preclassic Old Chinese **ŋhrōj?* (Starostin, *ChEDb*; *GSR* 0020 a). Baxter & Sagart (2014): Middle Chinese **ngwaeX* < Old Chinese **C.ŋʷˤra[j]?*.

According to interpolation introduced into the Tang annals, the Mengwu people had to be related with the tribe Mohe (靺鞨 *mòhé*[103]) from Manchuria. Kam Tak-sing (2017, 185) rejects this. He mentions that in the older 魏書 *Wèi Shū* "Book of Wei", describing the era Wei (AD 386–550), compiled in AD 551–554, the Mengwu language was connected with the language of the Kitans.

The ethnonym 靺鞨 *mòhé* in its Late Middle Chinese pronunciation ***muatxɦat* (Pulleyblank) resembles the ethnonym 勿吉 *mò*[104] *jí*[105], derivable from Middle Chinese ***mutkjit* (Pulleyblank) at least in its first part. The syllabic final *-t* may transcribe the final liquid in foreign proper names. Cf. also the Korean transcription 물길 *Mulgil*.

Mongolic

In the Uyghur script the ethnonym was first attested in Güyüg's seal from the 13th century as MWNKQWL (Kam Tak-sing 2017, 184). In the same time the Chinese transcription appears in *Mongγol-un ni'uča tobča'an*, i.e. "Secret history of the Mongols", as 忙豁勒 *máng*[106] *huō*[107] *lè*[108].

Early European

Already from the 13th century the first European records of the ethnonym come: *Carpini Mongali*, Marco Polo *Mongul*, Rubruck *Moal* (see Doerfer 1970, 74). In the

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103 靺 *mò* „socks; stockings; name of tribe" < Later Middle Chinese ***muat* (cf. Pulleyblank 1991, 218–19); 鞨 *hé* „shoes"; „buskin, turban; name of a tribe" < Late Middle Chinese ***xɦat* (cf. Pulleyblank 1991, 123). The *Mohe*, *Malgal*, or *Mogher* were a Tungusic people who lived primarily in modern Northeast Asia. The two most powerful Mohe groups were known as the Heishui Mohe, located along the Amur River, and the Sumo Mohe, named after the Songhua River. The Mohe constituted a major part of the population in the kingdom of Balhae, which lasted from the late 7th century to early 10th century. After the fall of Balhae, few historical traces of the Mohe can be found, though they are considered to be the primary ethnic group from whom the Jurchen people descended. The Heishui Mohe in particular are considered to be the direct ancestors of the Jurchens, from whom the 17th century Manchu people originated. The Mohe practiced a sedentary agrarian lifestyle and were predominantly farmers who grew soybean, wheat, millet, and rice, supplemented by pig raising and hunting for meat. The Mohe were also known to have wore pig and dog skin coats. <https://en.wikipedia.org/wiki/Mohe_people> On Mohe as ancestors of Manchu, see Pei Huang (1990, 252–53).

104 勿 *wù & mò* „should not, don't" < Early Middle Chinese ***mut* (Pulleyblank 1991, 327) ~ Middle Chinese ***müt* < Postclassic Chinese ***mwɨt* < Eastern Han Chinese ***mwət* < Western Han Chinese ***mət* < Classic & Preclassic Old Chinese ***mət* (Starostin, *ChEDb*; *GSR* 0503 a-g).

105 吉 *jí* „(to be) auspicious, lucky, positive" < Late & Early Middle Chinese ***kjit* (Pulleyblank 1991, 140) ~ Middle Chinese ***kjit* < Postclassic Chinese ***kjɨt* < Han Chinese ***kjət* < Preclassic & Classic Old Chinese ***kit* (Starostin, *ChEDb*; *GSR* 0393 a-h).

106 忙 *máng* „busy, hurriedly; to hurry, rush" < Middle Chinese ***mâŋ* < Late Postclassic Chinese ***māŋ* < Han Chinese ***māŋ* < Classic & Preclassic Old Chinese ***māŋ* (Starostin, *ChEDb*; *GSR* 0742 o).

107 豁 *huō* „opening, stake all, sacrifice, crack, slit"; *huò* „clear open exempt (from) liberal-minded".

108 勒 *lè* **„**to rein in, to compel, to force, to carve, to engrave; (literary) to command, to lead; (literary) bridle; бок, ребро**"** < Middle Chinese ***lʌk* < Postclassic Chinese ***lək* < Han Chinese ***rək* < Classic & Preclassic Old Chinese ***rək* (Starostin, *ChEDb*; *GSR* 0928 f-g).

Byzantine sources the form Μουγούλιοι was attested (Moravcsik 1958, 193), namely the forms like Μουγουλίους [Georgios Pakhymeros I 344_{15}: written about 1255–1308], Μουγουλίων [ib. II 620_{17} 637_{10}; Acta et Diplomata I 136: 1351], Μαγουλίων [epic about Digenes Akritas A I 76_{43}: the hero fought against Arabs in the 9th; in later reworking Seljuks and Mongols were also included there], Μαγουλίους [ib. A I 130_{48}], Μαγουλί[ω] ν [Chronologic notices: 1261 CE].

4.2.2. Etymology

Kam Tak-sing (2017, 185f) summarizes the most important attempts to explain the ethnonym Mongol:

4.2.2.1. In 1232, during the Southern Song era (1127–1279), the scholar Peng Daya[109] (彭大雅) was sent to Mongolia as an ambassador. He described geography, demography and customs of the Mongols in the treatise *Heida shilue* (黑韃事略) "Short notes on the Black Tartars", written in 1236, where the designation *Hei Dada* 黑韃靼 "Black Tartars" belonged to the Mongols living on the steppes north of the Gobi, contrary to *Bai dada* 白韃靼 "White Tartars", living in the south. Peng Daya sought the origin of the ethnonym in the Mongolic word *monggü(n)* "silver", seeing an analogy in the Golden Dynasty Jin (金 *jīn* "gold"; 1115–1234) found by Jurchens.

4.2.2.2. Rašīd al-Dīn (1247–1318), a historian of Jewish origin who later converted to Islam, statesman and physician in the court of Ilkhanids, ruling Persia in 1256–1335, in the beginning of the 14th cent. wrote in Arabic and Persian the treatise *Jāmiʕ al-tawārīḫ* "Compendium of Chronicles", in reality the first history of Eurasia from China to Europe, including the Mongolic Empire. Concerning the ethnonym, he used the formulation *lafẓ-i moġōl dar ʾaṣl mūng-ōl būda yaʕnī farō-mānda va sāda-dil* "the expression *moġōl* was originally 'helpless' and 'naive'", cf. Doerfer (1970, 68), who thought about corruption of such Mongolic forms as *munuγ*, *mungqaγ*, *mungqaγu* "dumm, blödsinnig, unvernünf". In the 17th cent. Abū ʾl-Ġāzī, the follower of Rašīd ad-Dīn, developed his ideas: *ʾaṣli lafẓi moγol muŋ ol turur ʕavāmmniγ tili kelmäslikdin bara bara moγol tedilär muŋniŋ maʕnāsi barča türk bilürlär qaiγu maʕnāsina turur olniŋ mainasi sāda-dil yaʕnī qaiγuli sāda temäk bolur* "die ursprüngliche Form des Ausdrucks *moγol* ist *muŋ ol*. Da dies für das Volk nicht gut aussprechbar war, sagte man schließlich *moγol*. Die Bedeutung von *muŋ* ist bei allen Türken bekannt: es hat die Bedeutung "Kummer"; *ol* bedeutet "naiv". Demnach bedeutet (*muŋ ol*) "bekümmert und einfach". Doerfer (1970, 69) confirmed the existence of the first component, while the second component did not exist according to him in Turkic. Doerfer (1970, 70) offered

109 http://www.chinaknowledge.de/Literature/Historiography/heidashilve.html.

to reinterpret the formulation *muŋ ol* as "es ist eine Not", where *ol* is the demonstrative, frequently used as copula in old and middle Turkic languages.

4.2.2.3. Doerfer (1970, 77) also mentioned Old Uyghur (Manichaean; 8th cent.) *munqul* "sinnlos" = *munkul* "hopeless, miserable, mentally disturbed, savage, and poisonous" by Clauson (1972, 768–69). They both exclude any connection with the ethnonym *Moŋγol*. Naturally, as a self-identification it is excluded, but pejorative designations given by neighbors are nothing unique. A textbook analogous example may be identified in Slavic *Němьcь* "German" vs. **němъ* "dumb, mute, speechless", understandable as the designation of a people speaking an unintelligible language.

4.2.2.4. Doerfer himself (1970, 77) sought a key to etymology of the ethnonym in Yakut *moγol*, *moγul*, *monol* "gross, solide; Mongol" (Pekarskij 1917, 1576, 1577, 1589), seeing analogy in the ethnonym *Türk*, interpretable as "mighty, powerful". Let us mention that already Ramstedt (1935, 264) connected Yakut *moγul* "big", Čaghatai *moγul* "Mongol; offenherzig" and Written Mongol *moŋγol*, *moŋγul* "Mongol". Kam Taksing (2017, 186) adds a comment that in the time, when Meng-wu were members of 室韋 *Shìwěi* confederation, they probably did not represent any more significant power.

4.2.2.5. Two scholars from Inner Mongolia in China, Mang Mu-lin and Chu-lete-mu, try to identify the ethnonym Mongol with two enigmatic forms, perhaps designating some heterogenous tribal confederation, namely 沒歌 *mò*[110] *gē*[111] and 沒骨 *mò gǔ*[112], located near the Ordos region and in the Gansu-Kokonor area respectively, according to "Book of Wei" (魏書 *Wèi Shū*), describing the events from AD 386–550, which were compiled by Wei Shou in 551–554. The Middle Chinese pronunciation of 沒歌 as **motkâ*, nor its Postclassic predecessor **mətkā* (both Starostin), are compatible with the ethnonym Mongol. A better situation is not with the form 沒骨, although the Middle Chinese pronunciation **motkot* or Postclassic Chinese **mətkwət* can reflect non-Chinese forms **moLkoL* or **məLkwəL* respectively, which are perhaps compatible with the ethnonyms 靺鞨 *mòhé*, in Middle Chinese pronunciation **muatɦat*, and 勿吉 *mòjí*, in Middle Chinese pronunciation **mutkjit*, alternatively reflecting **muaLɦaL* and **muLkjiL* respectively, but not with the ethnonym Mongol.

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110 沒 *mò* „drowned; to end, die; inundate". Starostin presented history only of the close word 歿 *mò* „to die, perish" [Han] < Middle Chinese **mot* < Postclassic Chinese **mhət* < Han Chinese **mhət* < Classic & Preclassic Old Chinese **mhət*, adding the comment: Not quite clear is the relationship of this word to 沒 **mət* (the words would seem identical, but the Jian-ou dialect preserves a distinction: 沒 *mo*[8] vs. 歿 *mu*[7]. Standard Sino-Vietnamese counterpart is *một* (*ChEDb*; *GSR* 0492 c, 503 k).

111 歌 *gē* „to sing; song, hymn, ode" < Middle Chinese **kâ* < Postclassic Chinese **kā* < Eastern Han Chinese **kā̆* < Western Han Chinese **kāj* < Classic & Preclassic Old Chinese **kāj* (*ChEDb*; *GSR* 0001 q-r).

112 骨 *gǔ* „bone, skeleton; firm, straight" < Middle Chinese **kot* < Postclassic Chinese **kwət* < Han Chinese **kwət* < Classic Old Chinese **kwət* < Preclassic Old Chinese **kūt* (Starostin, *ChEDb*; *GSR* 0486 a).

4.2.2.6. The third candidate of Mang Mu-lin and Chu-le-te-mu is 木骨 閭 *mù*[113] *gǔ*[114] *lǘ*[115], the ancestor of the Rouran (柔然 *Róurán*), according to "Book of Wei", who lived in the 4th cent. CE. His name may be projected into the Postclassic Chinese pronunciation as **mhōk kwət l(h)o* by Starostin. The name was interpreted as "bald" (Kam Tak-sing 2017, 187), but the closest Written Mongol form is *muqulaγ / muquliγ* "rounded, ball-shaped, globular" (Lessing 1960, 553). But with regard to his personal experience with captivity (Kam Tak-sing, l.c.) by the clan *Tuòbá* (拓拔) of *Xiānbēi* (鮮卑), it would be more reasonable to identify in his name the Mongolic word *muquli*, Kalmyk *moχlā*, *muχᵘlā* "slave" (Ramstedt 1935, 263, 268, added Written Mongol *boγul*; Čaghatai *bulγun* "Sklave, Diener").

4.2.2.7. Other etymological attempts summarized by Kam Tak-sing assume primary compounds. E.g Chuletemu judged that the first component had to develop from the possessive *manu* "our", but without any explanation of the fate of *-u* (cf. Kam Tak-sing 2017, 187).

4.2.2.8. Daoruntibu, Eerdengtai, Wuyundamai, and Asalatu, see explanation of the ethnonym in the first member of the formulation *möngke tngri* "eternal heavens", plus the word *γal* "fire". But the semantic motivation remains unexplained, not to mention elimination of the final syllable *-ke* (cf. Kam Tak-sing 2017, 188).

4.2.2.9. Schmidt (1829, 380) rejected Rašīd ad-Dīn's explanation of the ethnonym and offered his solution based on the word *mong* "trotzig, unerschrocken".

Concerning the second component, Sinor (1990) speculated about the suffix *-γul*, which should determine the clan names. As an example, he used Middle Mongol *Sarta'ul* "Muslim native of Central or Western Asia" (first known from Činggis' stone as 'inhabitants of Khwarezm'), from **sartaγ* = Manichaean Old Turkic (8th cent.) *sart*, Karakhanid (11th cent.) *sart* "merchant", Čaghatai (15th) *sart* "a Persian town-dweller" < Sanskrit *sārṭha-* "caravan, wealthy" (Clauson 1972, 846; Rachewiltz 1996, 202, fn. 10). This means that *-γ* is a part of the stem and the suffix is only *-(u)l*.

4.2.2.10. Banzarov (1891, 72–73) tried to identify the second component with Written Mongol *γoul* "river"[116], while the first member had to be inspired by the oronym

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113 木 *mù* „tree, wood, wooden; coffin; simple; numb; Juppiter" < Middle Chinese **muk* < Late Postclassic Chinese **mhwōk* Middle & Early Postclassic Chinese **mhōk* < Han Chinese **mhōk* < Classic & Preclassic Old Chinese **mhōk* (Starostin, *ChEDb*; *GSR* 1212 a-d).

114 骨 *gǔ* „bone, skeleton; firm, straight" < Middle Chinese **kot* < Postclassic Chinese **kwət* < Han Chinese **kwāt* < Classic Old Chinese **kwət* < Preclassic Old Chinese **kūt* (Starostin, *ChEDb*; *GSR* 0486 a).

115 閭 *lǘ* „gate of a village, street gate, village" [Late Zhou] < Middle Chinese **lö* < Postclassic Chinese **l(h)o* < Han Chinese **r(h)a* < Classic & Preclassic Old Chinese **r(h)a* (Starostin, *ChEDb*; *GSR* 0076 g).

116 Common Mongolic **gowl* „river; river valley"; secondarily „centre" > Written Mongol *ɣoul*, Middle Mongol *qol* [SH], *ɣol* [MA], Khalkha *gol*, Buriat *gol*, Kalmyk *ɣol*, Ordos *Gol*, Dongxian *Gon*, Dagur *gol(e)*, Šira-Yughur *Gol*, Monguor *Gor*, Moghol *ɣōl* (*EDAL* 561; Ramstedt 1935, 149–50; Doerfer in *TMEN* 1, 438 thought about the opposite development „centre" → „river").

Mona (莫納 *mò*[117] *nà*[118]) from the north bank of the Yellow River. Its Middle Chinese projection, **mâknʌp*, apparently cannot be connected with the ethnonym Mongol.

4.2.2.11. Kam Tak-sing (2017, 192–97) seeks the origin of the first component in the hydronym recorded in "Old Book of Tang" (舊唐書 *Jiù Tángshū*; compiled in 941–945) as 望建 *wàng*[119] *jiàn*[120] < Middle Chinese **mwàŋkàn*. Its source should be in the Hulun Lake (呼倫湖 *Hūlún Hú*; 2,339 km^2). It means, the river belongs in the basin of the *Ergüne* Rive*r* (1620 km; 164,000 km^2) which forms the Amur River (Chinese 黑龙江 *Hēilóng Jiāng* 'Black Dragon River'; Manchu *sahaliyan ula* 'Black Water') after its confluence with the Shilka River (555 km; 206,000 km^2). The hydronym *Ergüne* is probably identical with the toponym *Ergene Qun*, appearing in the "Secret History of the Mongols" (§§141, 144, 182). Just here the homeland of the Mongols has been located (Rachewiltz 2004, 232–33; Kam Tak-sing 2017, 194, 198). In the component *mong* Kam Tak-sing finds the word *mong* "reich, überflüssig; trotzig, dreist // богатый, изобильный, строительный, дерзкій" (Schmidt 1835, 217) = "riche, opulent; fougueux, impétueux // богатый, изобильный, строительный, дерзкій" (Kowalewski III, 2029a). Explaining the hydronym in the Middle Chinese transcription, **mwàŋkàn*, the meaning "rich, abundant" seems adequate. On the other hand, it was already Schmidt in 1829, who tried to explain directly the ethnonym with help of Written Mongol *mong* "trotzig, unerschrocken", i.e. the second group of meanings.

117 莫 *mò* „to be luxuriant, tranquil; no one, nothing, none; don't; evening, dusk; tent; desert" < Middle Chinese **mâk* < Postclassic Chinese **māk* < Han Chinese **māk* < Classic & Preclassic Old Chinese **māk* (Starostin, *ChEDb*; *GSR* 0802 a-c).

118 納 *nà* „to bring in, take in, put into; bring in tribute; bring in reports" < Middle Chinese **nʌp* < Postclassic Chinese **nāp* < Han Chinese **nāp* < Classic & Preclassic Old Chinese **nāp* (Starostin, *ChEDb*; *GSR* 0695 h; Vietnamese reading: *nạp*).

119 望 *wàng* „to look at from afar, look for, gaze at; the full moon, (15th) day of the full moon; name of a sacrifice" < Late Middle Chinese **v(jy)aŋ`* < Early Middle Chinese **muaŋ^h* (Pulleyblank 1991, 319) ~ Middle Chinese **mwàŋ* < Postclassic Chinese **mwàŋ* < Eastern Han Chinese **mwaŋh* < Western Han Chinese **maŋh* < Classic Old Chinese **maŋh* < Preclassic Old Chinese **maŋs* (*GSR* 0742 m-n; Starostin, *ChEDb*). Starostin's comments: Archaic loan is Vietnamese *mong* „to expect, desire", while Vietnamese *mùng*, *mồng* „first decade of the month" (="full moon") has parallels in Austroasiatic: PAA **mɔŋ* „moon, month") which could probably be the source of Old Chinese **maŋ(s)* according to him.

120 建 *jiàn* „set up, establish; erect; lunar month period" < Middle Chinese **kàn* < Late & Postclassic Chinese **kàn* < Early Postclassic Chinese **kàn* < Han Chinese **kanh* < Classic Old Chinese **kanh* < Preclassic Old Chinese **kaṛs* (Starostin, *ChEDb*; *GSR* 0249 a). Note: During Late Zhou period used also for a homonymous name of a constellation (Sagittarius).

4.3. Ethnonym Tungus

4.3.1. Early attestation

Witsen (1692; quoted 1705, 660) introduced the ethnonym *Tungus* into Europe, distinguishing three groups according to their style of life: 'Deze *Tungoesen* zijn van driederlei aert, als de *Kunny Tungoesen*, of die zich van Paerden bedienen: de tweede zijn *Alenny,* of die, welke zich van het Wild bedienen: de derde worden *Sobaltsy* genaemt, dat is, die een Honds leven leiden.'

"Tungusians are divided into three stocks: Horse Tungusians – they use horses; Deer Tungusians or those which use deer; the third ones are called Dog {Tungusians}, i.e. they live as dogs."

4.3.2. Etymology

4.3.2.1. Abū al-Ghāzī Bahādur, the khan of Khiwa from 1643 to 1663, was the author of the book *Shajare-i Türk* "Genealogy of Türks", where he probably proposed the first attempt to explain the ethnonym *Tungus* – see its French translation *Histoire généalogique des Tatars*[121] (Leiden: Abram Kallewier 1726, p. 344–45, fn. 4): 'Les Callmoucks & les Moungales de l'Ouest ne nourrissent point de bestes qui ne broutent l'herbe, & ils ont sur tout les pourceaux en horreur; de là vient qu'ils ont donné par mespris le nom de **Tongous** ou de pour-pourceaux à certains peuples de la Siberie, qui habitent vers leurs frontiers & que nous connoissons maintenant sous ce nom; & comme les Moungales de l'Est ne sont pas si scrupuleux sur cet article, puisqu'ils nourrissent des pourceaux en quantité, ils leur donnent pareillement par dérision le nom de **Tongous**, & c'est de là que quelques uns prennent occasion de confrondre les Moungales de l'Est avec ces autres **Tongous** ou **Toungouses**, que nous venons d'indiquer.'

But already Strahlenberg (1730; quoted from the English version from 1738, 52) rejected it: '... the **Tungusian** Tartars, or, more properly ... **Tingisian** Tartars, who have not their name from *tongus* swine' .. as the author of *Histoire généalogique des Tatars* observes.

But it is a problem already to identify a donor-language. In Yakut no continuant is attested (Pallas 1789, #153 quoted Yakut *тонгусь* "pig", but it is not confirmed by

121 *Histoire généalogique des Tatars*, traduite en français d'un manuscrit tatar rédigé en langue moghole par Abu al-Ghazi Bahadur, khan de Khwarezm, complétée de notes nombreuses et précises sur l'état actuel du nord de l'Asie avec les cartes géographiques requises, et du français en russe pour l'Académie des sciences.

other lexicographers), and so the closest parallel in both phonetic and geographic sense is Taranči *toŋus* < Proto-Turkic ***doŋuŕ*** pig"[122].

4.3.2.2. In the ethnonym *Tungus* Strahlenberg (1730; quoted 1738, 67) himself saw a borrowing from a source close to Arin *tjöŋä* "three" & *kse* "people", interpreting it as "Three {main} tribes". He referred to the Selkup designation *Kuellem* for the Tungusic people, meaning "(of) three".

4.3.2.3. According to Klaproth (1823, 288), it was Pallas who came up with the 'pig'-etymology of the ethnonym *Tungus*. Klaproth (1823, 288) himself offered his own solution, consisting of 'Tungus' *donki* "Leute", but it is impossible to verify such the word in *TMS*. On the other hand, Ket *dɛˀŋ* "people" seems to be the closest form to Klaproth's *donki* in Siberia.

4.3.2.4. Menges (1968, 32) rejected the traditional[123] explanation of the ethnonym *Tungus* from the Turkic word for "pig". Menges sought the origin of this ethnonym in Chinese annals. In the "Book of {Former} Han" (漢書 *Hàn shū*), describing the period from 221 BCE till 23 CE, the ethnonym 東胡 *dōng*[124] *hú*[125] was used (Menges 1968a, 32). Its Han Chinese pronunciation is reconstructible as ***tōŋɣā***, transformed into Middle Chinese ***tuŋɣo*** (Starostin). Just this form might probably have been adopted by early Mongols (Kitans?) with regard to the added final *-s*, which can be interpreted as the Mongolic plural suffix ***-s***: Written Mongol *-s* (stems ending in vowels), Middle Mongol *eres* "men" vs. *ere* "man" [Secret History], *quras* "rains" vs. *qura* [Muqqadimat], Moghol *šānā·z* "combs", Khalkha *erəs* "men", Kalmyk *noχᵒs* "dogs" etc. (Poppe 1955, 177–78), plus the Kitan plural in *-se*, cf. nom.pl. *ai.se* "years" vs. gen.sg. *ai.en*, dat.sg. *ai.de*; this suffix was also used in ethnonyms, e.g. *qid.se* "Kitans" (Kane 2009, 128, 141–42). Poppe (1952, 71) and Sinor (1952, 218) added the Tungusic counterparts: Ewenki collective in *-sa*, e.g. *mōsa* "forest" vs. *mō* "tree"; Manchu *-sa/-se/-si*, e.g. *sakdasa* "old men" vs. sg. *sakda*, or *agese* "princes" vs. sg. *age*, *hahasi* "men" vs. sg.

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122 Old Uyghur *toŋuz*, Karakhanid *toŋuz* [Mahmud of Kašghar], Middle Turkic *toŋuz* [Muhammad Mahdī Xān], Cumanic *toŋuz*, Čaghatai *toŋuz*, Uyghur *toŋɣuz*, Uzbek *toŋɣis*, Salar *toŋas*, Sary-Yughur *toŋɨs*, Taranči *toŋus*, Teleut, Altai *toŋɨs*, Altai dial. *tonus*, Karaim *toŋɣuz*, Balkar *toŋɣuz*, Kumyk *doŋɣuz*, Noghai *doŋɨz*, Tatar *duŋɣɨz*, Turkmen *doŋuz*, Kirghiz *doŋuz*, Karakalpak *doŋɨz*, Kazakh *doŋɨz*, Azerbaijani *donuz*, Gagauz *domuz*, Turkish *domuz* „pig" < ***doŋuŕ*** „pig" (Räsänen 1969, 488; Clauson 1972, 527; Sevortjan 1980, 267–68; *TMEN* 2, 585–86). Related may be Modern Korean *twāji* „pig" (Ramstedt 1949, 272) and perhaps Tungusic ***dāŋugari*** „a kind of seal", if the primary sense was *"water-pig" *vel sim*. (*EDAL* 1354–55).

123 Kept still in Wikipedia: <https://en.wikipedia.org/wiki/Tungusic_languages>

124 東 *dōng* „East" < Late & Early Middle Chinese ***təwŋ*** (Pulleyblank 1991, 80) ~ Middle Chinese ***tuŋ*** < Late Postclassic Chinese ***twōŋ*** < Middle & Early Postclassic Chinese ***tōŋ*** < Han Chinese ***tōŋ*** < Classic & Preclassic Old Chinese ***tōŋ*** (Starostin, *ChEDb*; *GSR* 1175 a-d).

125 胡 *hú* "dewlap; why?, how?; horse-riding steppe nomads (Han), Iranians (Tang); foreign, western; Tungus" < Late Middle Chinese ***xɦuɜ̆*** < Early Middle Chinese ***ɣɔ*** (Pulleyblank 1991, 126–27) ~ Middle Chinese ***ɣo*** < Postclassic Chinese ***ɣō*** < Han Chinese ***ɣā*** < Classic & Preclassic Old Chinese ***ghā*** (Starostin, *ChEDb*; *GSR* 0049 a').

haha, although the Manchu suffix may have been borrowed from Mongolic (Kitan?), cf. Sinor 1952, 218.

4.3.2.5. Xelimskij (1985, 211–13), Janhunen (1985, 74–75) and both Helimski & Janhunen (1990, 67–72), seek the origin of the ethnonym in the Nenets designation of the Evenki people, which was a source of Russian form *мунгус*, namely in Tundra Nenets *Tuŋgoq* ~ *Tuŋguq*, pl. *Tuŋgos-q* ~ *Tuŋgus-q*, Forest Nenets *Tiŋkuːs*, pl. **Tiŋkuːs-q*, derivable from Late Common Nenets **tuŋkos-* ~ **tiŋkos-* (the root vowel variants correspond to the variants **Tungusian** vs. **Tingisian**, recorded by Strahlenberg 1738, 52) < Early Common Nenets **tïŋko-s*. The final **-s* is probably an old collective suffix, forming also other ethnonyms, cf. Nenets *Tawiq* 'Nganasan', pl. *Tawis-q*. Its Tundra Enets counterpart pl. *taubo-q* 'Nganasan' implies the final **-p*, which may be projected in Early Common Nenets **tïŋkop* too. It seems, the final **kop* was an adaptation of the Selkup word *qup* ~ *qum* "man". The first component resembles the Selkup ethnonym *Tï* 'Tatar'. The compound **Tï-n-qup* "Tatar-GEN-man" = 'Tatar's man' really exists in Northern Selkup *Tïn qum* 'Tatar'. If Selkup *qum / qup* "man" has been derived from Uralic **koj(e) mз* (*UEW* 168), for the first component there is no Selkup nor Samoyedic or even Uralic etymology. Helimski & Janhunen find its origin in the Ket ethnonym *Dʌjgit*, pl. *Dʌjdɛŋ* "Nenets", where the second component represent the suppletive pair *kɛ$^{(ʔ)}$t* "man" vs. *dɛ^{ʔ}ŋ* "people" (Werner I, 421+185; III, 29). Selkup *Tï-n qum / qup* seems to be a semi-calque on the Ket ethnonym on the one hand and a source of Early Common Nenets **tïŋkop*, remodelled as **tïŋko-s*, on the other hand.

4.4.1. Choronym Korea

The geographic name ***Korea***, earlier written as *Corea* (in English first 1614), was introduced into Europe by Marco Polo in the form *Cauli* in the 14th cent. The present Chinese record 高麗 *gāo*[126] *lì*[127] was indeed pronounced as **kawli`* during the Yuan dynasty in the beginning of the 14$^{th}$ century, **kawliaj`* in the late Tang dynasty in 9th cent., **kawlɛj^{h}* in the Sui dynasty around 600 CE (Pulleyblank) ~ **kâwlìej* (Starostin), **kāwriēh* in the Eastern (Late) Han dynasty (Starostin) ~ **kɑule* (Schuessler), **kāwrēh* in the Western Han dynasty (Starostin) ~ pre-Han Old Chinese **kâurêh* (Schuessler).

126 高 *gāo* „high" < Yuan **kaw* < Late Middle Chinese **kaw* < Early Middle Chinese **kaw* (*GSR* 1129 a-c; Pulleyblank 1991, 104) ~ Middle Chinese **kâw* < Postclassic Chinese **kāw* < Han Chinese **kāw* < Classic & Preclassic Old Chinese **kāw* (Starostin, *ChEDb* 2005) ~ Late Han Chinese **kɑu* < Old Chinese **kâu* (Schuessler 2007, 251).

127 麗 *lì* „pair; well-proportioned; beatiful; to apply, attach" < Yuan **li`* < Late Middle Chinese **liaj`* < Early Middle Chinese **lɛj^{h}* (*GSR* 0878 a-b; Pulleyblank 1991, 189) ~ Middle Chinese **lìej* < Postclassic Chinese **liè̍j* < Eastern Han Chinese **riēh* < Western Han Chinese **rēh* < Classic Old Chinese **rēh* < Preclassic Old Chinese **rēs* (Starostin, *ChEDb* 2005) ~ Late Han Chinese **le* < Old Chinese **rêh* (Schuessler 2007, 353).

For the first time the term 高麗 was used in "Critical Essays" (論衡 *Lùn héng*), finished by Wang Chong in 80 CE, i.e. in the Eastern (Late) Han era, when it was reconstructible as **kāwriēh* by Starostin. It is a source of the term 고려, transcribed as *Goryeo* or *Koryŏ* (Beckwith 2007, 33, fn. 12). According to "Book of Han" (漢書 *Hàn shū* 28b: 2626; completed in 111 CE), the form 高句麗 *gāo gōu*[128] *lì*, must have been used already in 113 BCE. In Western Han Chinese its pronunciation should have been **kāwkwārēh* as per Starostin. Beckwith (2007, 33–34, fn. 12) judges that this dating is anachronistic and the toponym was put in the text of "Book of Han" only in the 1st cent. CE. Beckwith (2007, 31) sees in both terms the variants of the same geographic name. It would be easier, if the sign 高 *gāo* "high" in 高句麗 *gāogōulì* was interpreted in its Chinese sense, i.e. as the attribute "high". In this case the Eastern (Han) Chinese projections **kāwriēh* & **kwāriēh* really could reflect the variants of the same term.

4.4.2. Choronym Joseon

The alternative name of the country, 조선 *Joseon*, has been recorded in Chinese characters as 朝鮮 *Cháo xiǎn*, and designated both the 'Old Joseon' state (고조선 *Gojoseon*), from 108 BCE occupied by the Chinese Han dynasty, in 313 CE conquered by Goguryeo (Koguryŏ), and Joseon (Chosŏn) dynasty (1392–1897), changing to the Goryeo dynasty. Both characters have double readings with corresponding meanings:

(a) 朝 *zhāo* "morning" < Yuan **tşɛw* < Late & Early Middle Chinese **triaw* "morning" (*GSR* 1143 a-c; Pulleyblank 1991, 399) ~ Middle Chinese **ṭew* < Preclassic Old Chinese **traw*; cf. Sino-Vietnamese *triêu* (Starostin, *ChEDb* 2005) ~ Late Han Chinese **ṭɑu* < Old Chinese **trau* (Schuessler 2007, 607) ~ Middle Chinese **trjew* < Old Chinese **t<r>aw* (Baxter & Sagart, *OChDb*).

(b) 朝 *cháo* "royal court, dynasty" < Yuan **tşʰɛw* < Late **trɦiaw* < Early Middle Chinese **driaw* "court, dynasty" (*GSR* 1143 a; Pulleyblank 1991, 51) ~ Middle Chinese **ḍew* < Postclassic Chinese **ḍhew* < Han Chinese **ḍhaw* < Classic Old Chinese **dhraw* < Preclassic Old Chinese **dhraw*; cf. Sino-Vietnamese *triều* (Starostin, *ChEDb* 2005) ~ Late Han Chinese **ḍɑu* < Old Chinese **drau* (Schuessler 2007, 607).

(c) 鮮 (simplified 鲜) *xiǎn* "few, rare; exceptional, solitary" < Yuan **sjɛn ˇ* < Late Middle Chinese **sian'* < Early Middle Chinese **sian*' (*GSR* 0209 a-c; Pulleyblank 1991, 336) ~ Preclassic Old Chinese **s(h)arʔ* (Starostin, *ChEDb* 2005) ~ Late Han Chinese **sian*^{B} < Old Chinese **senʔ* (Schuessler 2007, 530) ~ Middle Chinese **sjenX* < Old Chinese **[s][e]rʔ* (Baxter & Sagart, *OChDb* 2014).

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128 句 *gōu* „hook; bent" < Yuan **kəw* < Late Middle Chinese **kəw* < Early Middle Chinese **kəw* (*GSR* 0108 a-b; Pulleyblank 1991, 109) ~ Middle Chinese **kʌw* < Late & Middle Postclassic Chinese **kāw* < Early Postclassic Chinese **kōw* < Han Chinese **kwā* < Classic & Preclassic Old Chinese **kō* (Starostin, *ChEDb* 2005) ~ Late Han Chinese *ko* < Old Chinese **kô* (Schuessler 2007, 257).

(d) 鮮 *xiān* "bright (in color), fresh, delicious, tasty" < Yuan **sjɛn* < Late Middle Chinese **sian* < Early Middle Chinese **sian* (*GSR* 0209 a-c; Pulleyblank 1991, 334) ~ Middle Chinese **sjen* < Postclassic Chinese **shjen* < Eastern Han Chinese **shjan* < Western Han Chinese **shan* < Classic Old Chinese **shan* < Preclassic Old Chinese **shar* (Starostin, *ChEDb* 2005) ~ Late Han Chinese **sian* < Old Chinese **san* (Schuessler 2007, 528) ~ Middle Chinese **sjen* < Old Chinese **[s][a]r* (Baxter & Sagart, *OChDb* 2014).

It seems that all of the above authors would probably agree that in the period 600 – 200 BCE the name was pronounced as **traw-sanʔ* or **traw-senʔ*, and before 600 BCE **traw-sharʔ* or **traw-serʔ* according to Starostin and Baxter & Sagart respectively. The initial cluster **tr-* was typical for earlier stages of Chinese, but excluded for Korean in all known stages of its development, Koguryo, Japanese and all Tungusic languages, i.e. all languages, which should be taken in account in the Korean Peninsula. This implies that the first component of this compound is a Chinese word. It is tempting to assume that it represents a semantic equivalent of the second, native, component. If the reading 朝 *zhāo* "morning" (**traw*) was primary (cf. Lee Ki-Moon & Ramsey 2011, 33), the latter member could correspond to Korean **sair* *"dawn, morning", reconstructed by Ramstedt (1949, 219; 1982, 166) on the basis of *saellyŏk* "dawn, daybreak" vs. *nyŏk* "side, angle" or *saeppyŏl* "morning star" vs. *pyŏl* "star", all from the verb *sae-*, Middle Korean *sāi-* "to dawn" (cf. *EDAL* 1197: Old Japanese *saya* "clear, light"; Evenki *sajirūl-* "to dawn", *sajirūlǯarī* "dawn"; Dagur *sajarin* "dawn"). This solution may be supported by information from the Korean chronicle, known as *Samguk Yusa* 'Memorabilia of the Three Kingdoms' (Hanja 三國遺事; Hangeul 삼국유사 *Samgungnyusa*), written in Classic Chinese, which was completed probably in the 1280s. This chronicle mediates the legend about Dangun, the founder of *Joseon*, the first Korean state. Dangun had to establish the capital in *Asadal* (Hangeul 아사달; Hanja 阿斯達 *ā*[129] *sī*[130] *dá*[131] < Early Middle Chinese **ʔasiǎdat* < Eastern Han Chinese **ʔāsjed(h)āt* < Western Han & pre-Han Old Chinese **ʔājsed(h)āt*, where the final **-t* could substitute for the final liquid in adopted foreign proper names). Lee Ki-Moon & Ramsey (2011, 33) speculate about the interpretation of this place-name as "Morning mountain" in the Koguryoan language, cf.

129 阿 *ā* 'prefix to names and terms of relationship' *& ē* „hill, slope, river bank" < Late Middle Chinese **ʔa* < Early Middle Chinese **ʔa* (*GSR* 0001 m; Pulleyblank 1991, 23, 86) ~ Middle Chinese **ʔâ* < Postclassic Chinese **ʔā* < Eastern Han Chinese **ʔā* < Western Han Chinese **ʔāj* < Classic & Preclassic Old Chinese **ʔāj* (Starostin, *ChEDb* 2005).

130 斯 *sī* „to cleave, tear apart; this, then" < Late Middle Chinese **sɻ̄* < Early Middle Chinese **siə̆/*si* (*GSR* 0869 a-b; Pulleyblank 1991, 291) ~ Middle Chinese **sje* < Postclassic Chinese **sje* < Eastern Han Chinese **sje* < Western Han Chinese **se* < Classic & Preclassic Old Chinese **se* (Starostin, *ChEDb* 2005).

131 達 *dá* „to extend to, reach to, come to" < Late Middle Chinese **tʰat* < Early Middle Chinese **dat* (*GSR* 0271 b; Pulleyblank 1991, 69) ~ Middle Chinese **dât* < Postclassic Chinese **d(h)āt* < Han Chinese **d(h)āt* < Classic & Preclassic Old Chinese **d(h)āt* (Starostin, *ChEDb* 2005).

**tar*[132] "mountain" and Old Japanese *asa* "morning", Middle Korean *ačham* id.; maybe Evenki *esī* "(just) now" etc. (cf. *EDAL* 492).

4.5.1. Choronym Japan

The present name of Japan *Nihon* or *Nippon* has its origin in the compound日本 "origin of the sun"[133] (Piggott 1997, 143–44), consisting of the components *rì*[134] *& běn*[135] in Chinese and *nichi & hon* in Sino-Japanese. They were preceded by Middle Chinese **ńitpón* (*GSR* 0404 a-d+0440 a; Starostin, *ChEDb* 2005) ~ Early Middle Chinese **ɲitpən*' (Pulleyblank 1991, 266+32) with following assimilation **-tp- > *-pp-*. In Europe the name of the Japan[136] Archipelago was brought by Marco Polo in the form *Cipangu*. It perhaps reflects the pronunciation *žipan* of the characters 日本, recorded in the lexicon "Rhymes of the central plain" (中原音韻 *Zhōngyuán Yīnyùn*), compiled by Zhou Deqing (周德清) in 1324 (see Starostin, *ChEDb*); cf. also the transcription *žibun* in the lexicon "Rimes in Mongol Script" (蒙古字韻 *Měnggǔ Zìyùn*) also from the 14th cent., applying the 'Phags-pa script. The third syllable *-gu* may be identified with Chinese 國 *guó* "state, kingdom", with pronunciation *kuei* according to *Zhōngyuán Yīnyùn*, or *gue* according to *Měnggǔ Zìyùn* (Schuessler 2007, 442, 160, 268). Similar forms are attested at some 15th & 16th cent. maps as *ixola de cimpagu /Cipangu/* by Fra Mauro (1453) or *Zipangni* by Sebastian Münster (1561). The forms known from the European languages of the 16th and 17th centuries, namely Portuguese *Iapam*, Spanish *Japon*, English *Giapan*, were

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132 Beckwith 2007, 136–37, 151, 171; he compares it with the first syllable of Old Japanese *take* „mountain", *taka-* „high" (cf. *EDAL* 1359) and speculates about their adoption of hypothetic Late Middle Old Chinese 山 **dar/*tar* „mountain". But the initial dental appears in none of the relevant reconstructions of the Chinese historical phonology and the final **-r* is reconstructed only by Baxter & Sagart for the earliest stage of Old Chinese – cf. Middle Chinese **ṣɑn* < Classic & Preclassic Chinese **srān* (Starostin, *ChEDb* 2005) ~ Middle Chinese **ṣan* < Old Chinese **srân* (Schuessler 2007, 453) ~ Middle Chinese **srean* < Old Chinese **s-ŋrar* (Baxter & Sagart 2014, 148). It seems more promising to seek relatives of Koguryo **tar* „mountain" in Common Mongolic **teriγün* „head" (cf. *EDAL* 1428; the semantic difference as in Turkmen *depe* „Hügel; Gipfel", Old Turkic *töpä* „Gipfel, Scheitel" – see Räsänen 1969, 494) or in Tungusic: Even Arman *tālāq* „rock" (*TMS* II, 156).

133 For the first time this idea was probably used in the letter of Prince Shōtoku to the court of the Sui dynasty from 607 CE, where the formulation „the Emperor of the Land where the Sun rises" (日出處天子*rì chū chù tiān zǐ*) appeared.

134 日 *rì* „sun, day" < Yuan *ri* ` < Late Middle Chinese *\*rit* < Early Middle Chinese *\*ɲit* (Pulleyblank 1991, 266) ~ Middle Chinese *\*ńit* < Postclassic Chinese *\*ńit* < Eastern Han Chinese *\*ńət* < Western Han Chinese *\*njət* < Classic & Preclassic Old Chinese *\*nit*` cf. the dialect forms as Xiamen *ʒit*, Chaozhou *zik*, Guangzhou *jat*, Nanchang *ńit*, Meixian *ńit*, etc. (*GSR* 0404 a-d; Starostin, *ChEDb* 2005).

135 本 *běn* „origin; base, foundation, fundament; trunk" < Yuan *pun*ˇ < Late Middle Chinese **pun'* < Early Middle Chinese **pən*' (Pulleyblank 1991, 32) ~ Middle Chinese **pón* < Postclassic Chinese **pə́n* < Han Chinese **pə́n* < Classic Old Chinese **pə́n* < Preclassic Old Chinese **pārʔ*; cf. dialect forms as Meixian *pun*, Guangzhou *pun*, Xiamen *pun* etc. (*GSR* 0440 a; Starostin, *ChEDb* 2005).

136 Cf. https://en.wikipedia.org/wiki/Names_of_Japan.

probably mediated by Old Malay *Japun* or *Japang* or directly adapted from some of the Sinitic spoken dialects as Guangzhou *jatpun*, Wenzhou *zaipaŋ*, Taiyuan *zəʔpəŋ*, besides Xiamen *ʒitpun*, Chengdu *zipən*, Chaozhou *zikpuŋ* etc. (see *ChEDb*).

4.5.2. Ethnonym Wo

The first known written information about the islands of the Japan archipelago and its inhabitants appears in Chinese sources.

The text called "Classic of Mountains and Seas" (山海經 *Shān hǎi jīng*), whose origin is dated between 300 BCE and 250 CE, gives what may be the oldest reference about a country called 倭 *Wō*, identified as Japan, namely in the chapter "Classic of Regions within the North Seas" (海內北經 *Hǎinèiběi jīng*):

Gài (蓋) {'cover'} Land is south of *Jùyān* (鉅燕) and north of *Wō* (倭). *Wō* belongs to *Yān* (燕). *Cháo-xiǎn* (朝鮮; i.e. Chosŏn, Korea) is east of *Liè Yáng* (列陽) south of *Hǎi Běi* (海北) [i.e. 'North Sea'] Mountain. *Liè Yáng* belongs to *Yān*[137] (cf. Nakagawa 2003, 49; he mentions that ... 'The reference to *Wō* in *Haineibei jing* may indicate a possible tributary realtionship between *Wō* and the kingdom of *Yān* as far as the Warring States era.').

"Book of Han" (漢書 *Hàn shū*) devoted to history of the Western {Former} Han dynasty from 206 BCE till 23 CE, completed in 111 CE – in Volume 28B: "Treatise on Geography" (地理志 *Dìlǐzhì*):

"Beyond *Lè-làng*[138] (樂浪) in the sea, there are the people of *Wō* (倭). They comprise more than one hundred communities (國 *guó*). It is reported that they have maintained intercourse with China through tributaries and envoys." (cf. Nakagawa 2003, 50).

"Records of Wei" (魏志 *Wèi Zhì*), compiled in 297 CE, inform us about history of the Cao Wei Kingdom (曹魏 *Cáo Wèi*) ruling Northeast China in 220–265 CE. In the chapter "Encounters with Eastern Barbarians" (東夷傳 *dōng yí zhuàn*) there is information about the shamaness and queen of Wō, called Pimiko[139]:

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137 This state was situated north of Peking in the period from *c*. 1000 till 222 BCE.

138 A Chinese commandery founded in northern Korea during the Western Han era in 108 BCE.

139 See *Sources of Japanese Tradition*, compiled by Theodore de Bary, Donald Keene, George Tanabe, & Paul Varley, 2nd ed., vol. 1. New York: Columbia University Press, 2001, 6–8. Further cf. <http://radulfr.net/textus/japan.php>; <https://en.wikipedia.org/wiki/Wa_(Japan)>; <https://en.wikipedia.org/wiki/Himiko>.
A pronunciation of the name of the Queen Pimiko (卑彌呼; in modern Chinese pronunciation *bēimíhū* or *bìmíhū*) may be reconstructed according to projection into various stages of development of Chinese by various sinologists:
Early Middle Chinese (6th cent. CE) **pji(ǰ)mji(ǰ)xɔ* (Pulleyblank 1991, 31, 212, 126; cf. *GSR* 0874 a-b, 0359 m-n, 0055 h).

"The people of Wō (倭人 *Wōrén*) dwell in the middle of the ocean on the mountainous islands southeast of {the prefecture of} *Dài-fāng* (帶方). They formerly comprised more than one hundred communities. During the Han dynasty, {Wa envoys} appeared at the Court; today, thirty of their communities maintain intercourse [with us] through envoys and scribes." (translated by Tsunoda 1951, 8).

"The country formerly had a man as ruler. For some seventy or eighty years after that there were disturbances and warfare. Thereupon the people agreed upon a woman for their ruler. Her name was Pimiko. She occupied herself with magic and sorcery, bewitching the people. Though mature in age, she remained unmarried. She had a younger brother who assisted her in ruling the country. After she became the ruler, there were few who saw her. She had one thousand women as attendants, but only one man. He served her food and drink and acted as a medium of communication. She resided in a palace surrounded by towers and stockades, with armed guards in a state of constant vigilance." (translated by Tsunoda 1951, 13).

"Herein we address Pimiko, Queen of Wō, whom we now officially call a friend of Wei. [… Your envoys] have arrived here with your tribute, consisting of four male slaves and six female slaves, together with two pieces of cloth with designs, each twenty feet in length. You live very far away across the sea; yet you have sent an embassy with tribute. Your loyalty and filial piety we appreciate exceedingly. We confer upon you, therefore, the title 'Queen of Wō Friendly to Wei,' together with the decoration of the gold seal with purple ribbon. The latter, properly encased, is to be sent to you through the Governor. We expect you, O Queen, to rule your people in peace and to endeavor to be devoted and obedient." (translated by Tsunoda 1951, 14).

"When Pimiko passed away, a great mound was raised, more than a hundred paces in diameter. Over a hundred male and female attendants followed her to the grave. Then a king was placed on the throne, but the people would not obey him. Assassination and murder followed; more than one thousand were thus slain. A relative of Pimiko named Iyo[140], a girl of thirteen, was [then] made queen and order was restored. Chêng

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Late (= Eastern) Han Chinese (0 – 200 CE) **piemiehɑ* < Old Chinese (before 200 BCE) **pemehâ(h)* (Schuessler 2009, 127, §7–29a; 125, §7–20m; 49, §1–17h).
Western Han Chinese (200 BCE – 0) **pemeu̯ā* < Preclassic Old Chinese (before 600 BCE) **pemeswā* (Starostin, *ChEDb* 2005).
Middle Chinese (600 CE) **pjimjiexu* < Old Chinese (before 600 BCE) *pemnə[r]q$^{h\varsigma}$a* Baxter & Sagart (*OChDb* 2014).

140 The name Iyo was written by the characters 壹與 *yī yǔ*, whose historical reading was as follows:
壹 is an alternative sign for 一*yī* „one, single, whole" < Middle Chinese **ʔjit* < Postclassic Chinese **ʔjit* < Han Chinese **ʔjət* < Classic & Preclassic Old Chinese **ʔit* (*GSR* 0394 a-d, 0395 a; Starostin, *ChEDb* 2005).
與 *yǔ* „to join company, associate with; with, and" < Middle Chinese **jǒ* < Late & Middle Postclassic Chinese **jó* < Early Postclassic Chinese **ź́ó* < Eastern Han Chinese **ź́á* < Western Han Chinese **lá* < Classic Old Chinese **lá* < Preclassic Old Chinese **laʔ* (*GSR* 0089 b-d; Starostin, *ChEDb* 2005).

issued a proclamation to the effect that Iyo was the ruler." (translated by Tsunoda 1951, 16).

The sign 倭 has three readings, (a) *wō* 'old name for Japan; dwarf'; (b) *wēi* "long and winding" (e. g. road); (c) *wǒ* "an ancient hairstyle *used in* 倭墮髻 / 倭堕髻 *wōduòjì*, "a hairstyle for women that was popular during the Han Dynasty". Let us repeat the existing projections in older stages of Chinese by various sinologists[141]:

(a) *wō* 'old name for Japan; dwarf' < Late Middle Chinese **ʔua* < Early Middle Chinese **ʔwa* (Pulleyblank 1991, 324).

(b) *wēi* "long and winding" (e. g. road) < Early Middle Chinese **ʔwi(ə)* (Pulleyblank 1991, 319; *GSR* 0357 b) ~ Middle Chinese **ʔwe* < Postclassic Chinese **ʔwe* < Eastern Han Chinese **ʔwe* < Western Han Chinese **ʔwaj* < Classic Old Chinese **ʔwaj* < Preclassic Old Chinese **ʔʷaj* (Starostin, *ChEDb*). Similarly Schuessler (2009, 221, §19–10 b): Late Han Chinese **ʔyai* < Old Chinese **ʔoi*.

Starostin (*ChEDb*) did not offer any older reconstruction of pronunciation of the reading *wō*, but it is possible to extrapolate it on the basis of the character 踒with the same modern reading *wō* "to sprain" and common phonetic 委, concretely 踒 *wō* "to sprain, strain; bent legs" [Late Zhou] < Middle Chinese **ʔwâ* < Postclassic Chinese **ʔwā* < Eastern Han Chinese **ʔwā̄* < Western Han Chinese **ʔwāj* < Classic Old Chinese **ʔwāj* < Preclassic Old Chinese **ʔʷāj* (Starostin, *ChEDb* 2005). It is apparent that from the 2nd mill. BCE till Western Han, the reading of these two characters differed only in quantity, which could be caused by prosodic circumstances. It would mean that the projection of 倭 *wō* 'old name for Japan; dwarf' into **ʔwǎ̄j* for Han and Classic Old Chinese seems quite adequate. The meaning "dwarf" was probably added as secondary, cf. the character 矮 *ǎi*[142] "short (of stature); midget, dwarf; low", consisting of the radi-

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壹 *yī* < Late Han & Old Chinese **ʔit* (Schuessler 2009, 299, §29–13a).
與 *yǔ* < Late Han **jɑ* < Old Chinese **laʔ* (Schuessler 2009, 55, §1–43a).
Both sinologists agree in the pronunciation **ʔitlaʔ* in pre-Han Chinese. According to Starostin it continued in Western Han Chinese **ʔjətlá*, and their reconstruction for the Eastern (Late) Han stage is again very similar: **ʔjətźá* vs. **ʔitjɑ*. Taking in account the fact that the coda *-t* served to express final liquids in Chinese transcriptions of foreign words or proper names, it is possible to speculate about a primary form **ʔiRRa* or sim. of this name. If it was a name of a young lady, it is tempting to connect it with Old Silla **irri* (Lee Ki-Moon 1977, 68) ~ **jirri* „star" (Menges 1984, 268), and further with Turkic **juldıŕ* „star" (Räsänen 1969, 210; Clauson 1972, 922–23; *ESTJ* 4, 279–280).

141 In agreement with the Chinese tradition, Zhengzhang (2003) proposed different reconstructions for the character 倭:
(a) *wō* „dwarf, dwarfish, short; Japan, Yamato" < Old Chinese **qoːl* (No. 12888)
(b) *wēi – used in* 倭遲 / 倭迟, alternative form of 逶迤 *wēiyí*, „winding; meandering" < Old Chinese **qrol* (No. 12902)
(c) *wǒ – used in* 倭墮髻 / 倭堕髻 *wōduòjì*, „a hairstyle for women that was popular during the Han Dynasty" < Old Chinese **qoːlʔ* (No. 12891) <https://en.wiktionary.org/wiki/%E5%80%AD>

142 矮 *ǎi* „short (of stature); midget, dwarf; low" < Middle Chinese **ʔᾰ́* < Postclassic Chinese **ʔiᾰ́* <

cal 矢 *shǐ* “arrow” and phonetic 委 *wěi* & *wēi*[143] (Carr 1992, 2, 9). Let us mention that the character 倭 consists of two components, the same phonetic 委 *wěi* & *wēi* and the radical 人 *rén* “person” (Carr 1992, 2). It presents an attractive solution, if the Chinese radical 人 *rén* “person” expresses the same as the native word, transcribed as 委 *wěi* & *wēi* < **ʔwaj*. A good candidate for this hypothetic native word for “person” *vel sim*. may be Old Japanese *wo* “man”, besides the synonymous compounds *wonokwo*, *wotokwo*, lit. “male child”, plus *wosu* “male”, Middle Japanese *wo*, *wonoko*, *wòtòkò*, Tokyo *otokó*, Kyoto *ótoko*, Kagoshima *otokó*; Ryukyu: Nase *jìNgá*, Shuri *jíkígá*, Hateruma *bìdùmù*, Yonaguni *bìNgà*, plus Miyako (Nevskij) *biki* “man, male” (Starostin 1991, 260, 266, 276: proto-Japonic **bə̀*; 110, 147).

Starostin (1991, 110, 147; cf. also *EDAL* 335: proto-Altaic **bə̀je*) compared the Japonic data with Tungusic **beje* > Evenki *beje*, Even *bej*, Negidal *beje*, Solon *bei*, *beje* “man”, Nanai *beje* “person” (*TMS* 1, 122–23), and Mongolic **beje* “body, person, self” > Written Mongol *beje*, Middle Mongol *beje* [HY, SH], *bäjä* [IM], *bǐjǎ*, *bijä-du* [MA], Khalkha *bije*, Buryat *beje*, Kalmyk *bī, bījə*, Ordos *bije*, *beje*, Dongxian *beije*, Dagur *bej(e)*, Šira Yughur *bəi*, Monguor *bīje*, *buje* (Sun Zhu 1990, 147; Ramstedt 1935, 47). It is possible to add Koguryŏ 巴 **paɨ* “male person, man (夫)” (Beckwith 2007, 134 without any cognates; Blažek 2009, 17, #49: Koguryŏ + Japanese + Tungusic + Mongolic).

Eastern Han Chinese **ʔriɛ́* < Western Han Chinese **ʔrɛ́* < Classic Old Chinese **ʔrɛ̄* < Preclassic Old Chinese **ʔ$^{(w)}$rēʔ*; there was probably some early dialect variant reflected in Min dialects: Xiamen *ue*, Chaozhou *oi*, Fuzhou *uei*, plus Sino-Korean *oai* and Japanese *wai* (Starostin, *ChEDb* 2005), which could merge with Han and Classic Old Chinese 倭 **ʔwǎj*.

143 委 *wěi* „to send, order; entrust; to bend, curve“ [Late Zhou] < Middle Chinese **ʔwé* < Late Postclassic Chinese **ʔwáj* < Middle & Early Postclassic Chinese **ʔwáj* < Han Chinese **ʔwáj* < Classic Old Chinese **ʔwáj* < Preclassic Old Chinese **ʔ^{w}ajʔ*; before Late Zhou the character 委 with the modern reading *wēi* was only used in some compounds (with Preclassic Old Chinese reconstructions): 委遲 **ʔ^{w}aj-Łhəj* „to be winding“, 委佗 **ʔ^{w}aj-lāj*, 委蛇 **ʔ^{w}aj-laj* „to be graceful, compliant, gracious“ (*GSR* 0357 a; Starostin, *ChEDb* 2005).

5. Sketch of the comparative phonetics of the Altaic family

5.1. Survey of the Turkic comparative phonetics

The first important step in the field of comparative phonetics of the Turkic languages was realized by Schott (1841, 13–14; 1849, 120) and Budenz (1864, 243–44), who both determined the correspondence of Čuvaš *-l-* vs. Common Turkic **-š-* and *-r-* vs. **-z-* respectively. Radloff (1882; 1901) and Grønbach (1902), latter reviewed in details by Pedersen (1903), concentrated especially on vowel correspondences. In the same year 1949, the Turkish linguist Emre and Finnish linguist Räsänen independently published their comparative phonetics of the Turkic languages. The Russian version of the latter one was published still six years later (Räsänen 1955a). Menges (1968/1995, 73–107) included in his book *The Turkic Languages and Peoples* the chapter "Sketch of the comparative phonology". In 1970 Aleksandr Ščerbak presented his version of the comparative phonetics of the Turkic languages, where he compared 21 modern Turkic languages. Ščerbak's (1970, 173–74) reconstruction of the proto-Turkic consonantism is minimalistic: **θ*, **s*, **š*, **p*, **m*, **k*, **K*, **č*, **-j-*, **-r-*, **-l-*, **-n-*, **-ŋ-*, **-j-*, **-β-/*-β'-*, **-γ-/*-γ'-*, **-δ-*, where **θ* is used instead of the traditional **j* (= **ź* by Mudrak). Instead of the traditional Late Common Turkic **z* ~ Čuvaš *r* Ščerbak reconstructed $*s_3$, i.e. the allophone of **s*, and for traditional Late Common Turkic **š* ~ Čuvaš **l* he reconstructed $*š_3$, i.e. the allophone of **š*. In the case of vocalism, he reconstructed 16 proto-Turkic vowels (p. 157): **a*, **ā* (~ **ïa*), **o*, **ō*, **u*, **ū*, **ï*, **ī*, **ä*, **ā̈*, **ö*, **ō̈*, **ü*, **ṻ*, **i*, **ī*. In the chapter *Fonetika* of their "Comparative-historical grammar of the Turkic languages", Serebrennikov & Gadžieva (1979, 7–76) are close to Ščerbak's position concerning rhotacism (Čuvaš *r* < **z*), but to Ramstedt's & Poppe's position concerning sigmatism (Late Common Turkic **š* ~ Čuvaš *l* < **l*) – see pp. 64–65, 70 respectively. The question of priority of **z* or **r* is crucial in Turkology and has been solved variously:

Ramstedt 1922–23, 29: **-z(-) <*-ŕ(-)*;

Poppe 1926, 109–110: **-z(-) <*-ř(-)*;

Pritsak 1964: **-z < *-r+ti*;

Tekin 1969, 1975, 1979, 1986, 1991: **-z(-) < *-r#*, criticized by Miller 1975, who explained these reflexes as continuants of two non-anlaut $*r_1$ and $*r_2$. Similarly Xelimskij 1986a, b, c.

Nauta 1972: **-z(-) < *-r(-)* in dependence of prosodic cicumstances;

Doerfer 1975–76, 1984, 1988: **-z- < *-r̰-*.

On the other hand, Benzing, Clauson, Ligeti (1980), Németh (1912, 552), Ščerbak (1970, 1987[1992]) keep the priority of **z*, Ščerbak still proposed **z < *s*.

Recently three large studies devoted to the comparative phonetics of the Turkic languages have appeared: the collective monograph headed by Tenišev (1984), the subchapter of *EDAL* devoted to Turkic comparative phonetics by Anna Dybo (2003) and the Russian enlarged version of the preceding text by Dybo and Mudrak (2006). The last two sources are most detailed and for this reason they are used here.

The tables below follow Anna Dybo (*EDAL* I, 2003, 136–49) and Dybo & Mudrak (2006, 13–15), demonstrating the sound correspondences among 22 contemporary languages, Old Uyghur and early Middle Turkic from the time of the Karakhanids (AD 999–1211).

	b-[1]	***p/V̌-***	***p/V̄-***	***-b-***	***-m(-)***	***t-***	***t/V̌-***	***t/V̄-***	***d-***	***d***
Old Uyghur	*b-*	*p*	*-p-*	*b*	*m/-n*	*t*	*t*	*t*	*t*	*d*
Karakhanid	*b-*	*-p-/-b-/-p*	*-p-/-b-/-p*	*v*	*m/-n*	*t*	*t*	*t*	*t*	*δ*
Yakut	*b-*	*-b-/-p*	*-b-/-p*	*b/ø*[4]	*m/-n*	*t*	*t*[9]	*t*[9]	*t*	*t*
Tuvin	*b-/p-*	*V“vV/ hV-/-“p*	*VvV/-p*	*-v-/-ø-*[4] */-g*	*m/-n*	*t/d*[7]	*V“dV /-“t*	*VdV/-t*	*t/d*	*VdV/-t*
Tofalar	*b-/p-*	*V“pV/-p*	*VbV/-p*	*-b-/-ø-*[4]*/-g*	*m/-n*	*t/d*[7]	*V“tV/-“t*	*VdV/-t*	*t/d*	*VdV/-t*
Khakas	*p-*	*-b-/-p*	*-b-/-p*	*-b-/-ø-*[4]*/ -g/-b*	*m/-n*	*t*	*-d-, -t*	*-d-, -t*	*t*	*z/-s*
Šor	*p-*	*-b-/-p*	*-b-/-p*	*-b-/-ø-*[4]*/ -g*[5]*/-p*	*m/-n*	*t*	*-d-*[10]*, -t*	*-d-*[10]*, -t*	*t*	*z/-s*
Oirot (Altai)	*b-*	*-b-/-p*	*b-/-p*	*b/ø*[6]	*m/-n*	*t*	*-d-, -t*	*-d-, -t*	*t*	*d’/j*[14]
Kirgiz	*b-*	*-p-/-b-/-p*	*b-/-p*	*-b-/-j-/-ø-*[4]	*m/-n*	*t*	*t*	*t*	*t*	*j*
Uyghur (New)	*b-/p-*	*p*	*P*	*b/v/g/j/ø*[5]	*m/-n*	*t*	*t*	*t*	*t*	*j*
Uzbek	*b-*	*p*	*-v-/-p/b*[3]	*v/g/j/ø*[5]	*m/-n*	*t*	*t*	*t*	*t*	*j*
Kazakh, Karakalpak	*b-*	*p, -b-*	*-b-/-p*	*b/w/j/ø*[4]	*m/-n*	*t*	*t*[11]	*t*[11]	*t(/d-)*	*j*
Nogai	*b-*	*p, -b-*[2]	*-b-/-p*	*b/w/j/ø*[4]	*m/-n*	*t*	*t*[11]	*t*[11]	*t(/d-)*	*j*
Baškir	*b-*	*p, -b-*	*-b-/-p*	*w/j/ø*[4]	*m/-n*	*t*	*t*	*t*	*t*	*j*
Tatar (Siberia)	*b- (p-)*	*p, -b-*	*-b-/-p*	*w/j/ø*[4]	*m/-n*	*t*	*t*	*t*	*t*	*j*
Kumyk	*b-*	*p, -b-*	*-b-/-p*	*w/j/ø*[4]	*m/-n*	*t/d*	*t*	*t*	*t/d*	*j*
Balkar	*b-*	*p, -b-*	*-b-/-p*	*w/j/ø*[4]	*m/-n*	*t*	*t*	*t*	*t*	*j*
Karaim	*b-*	*p, -b-*	*-b-/-p*	*w/j/ø*[4]	*m/-n*	*t*	*t*	*t*	*t*	*j*
Turkmen	*b-/p-*	*p*	*-b-/-p*	*w/j/ø*[5]	*m/-n*	*t/d*[7]	*t*	*d/-t*	*d*	*j*
Azerbaijani	*b-/p-*	*p*	*-b-/-p*	*v/j/ø*[5]	*m/-n*	*t/d*[7]	*t*	*d*	*d/t*[13]	*j*
Gagauz	*b-/p-*	*p*	*-b-/-p*	*v/ø*[4]	*m/-n*	*t/d*[7]	*t*	*d/-t*	*d/t*[7]	*j*
Turkish	*b-/p-*	*p*	*-b-/-p*	*v/j/ø*[5]	*m/-n*	*t/d*[7]	*t*	*d/-t*	*d/t*[7]	*j*
Khalaj	*b-*	*-b-/-p*	*-b-/-p*	*v/ø*[4]	*m/-n*	*t*	*t*	*t*	*t*	*d*
Čuvaš	*p-*	*-b-/-p*	*-b-/-p*	*v/ø*[4]	*m/-n*	*t*[8]	*-d-*[12]*/-t*	*-d-*[12]*/t*	*t*[8]	*-r-*

	s-	***s/V̌-***	***s/V̄-***	***n***	***r***	***l***	***č-***	***č/V̌-***	***č/V̄-***	***j-***	***j***	***j***
Old Uyghur	*s*	*s*	*s*	*n*	*r*	*l*	*č*	*č*	*č*	*j*	*j*	*d*
Karakhanid	*s*	*s*	*s*	*n*	*r*	*l*	*č*	*č*	*č*	*j*	*j*	*δ*
Yakut	*ø*	*-h-/-s/ -t*[17]	*-h-/-s/ -t*[17]	*n*	*r*	*l*	*s*	*-h-/-s*	*-h-/-s*	*s*	*j*	*t*
Tuvin	*s*	*-“z-/-“s*	*-z-/-s*	*n*[19]	*r*	*l*	*š*	*-“ž-/-“š*	*-ž-/-š*	*č*	*j*	*VdV*
Tofalar	*s*	*,‘s*	*-z-/-s*	*n*	*r*	*l*	*š*	*-“ǯ-/-“š*	*-ǯ-/-š*	*č*	*j*	*VdV*
Khakas	*s*	*z*	*z*	*n*	*r*	*l*	*s*	*-ǯ-/-š*	*-ǯ-/-š*	*č*	*j*	*z*
Šor	*s*	*z*	*z*	*n*	*r*	*l*	*š*	*č*	*č*	*č*	*j*	*z*
Oirot (Altai)	*s*	*z*	*z*	*n*	*r*	*l*	*č*	*č*	*č*	*d’/j*[14]	*d’/j*[14]	*-j-*
Kirgiz	*s*	*s*	*s*	*n*	*r*	*l*	*č*	*č*	*č*	*,*	*j*	*j*
Uyghur (New)	*s*	*s*	*s*	*n*	*r/-j/-ø-*	*l*	*č*	*č*	*č*	*j*[20]	*j*	*j*
Uzbek	*s*	*s*	*s*	*n*	*r*	*l*	*č*	*č*	*č*	*j*[21]	*j*	*j*
Kazakh, Karakalpak	*s*	*s*	*s*	*n*	*r*	*l*	*š*	*š*	*š*	*ž*	*j*	*j*
Nogai	*s*	*s*	*s*	*n*	*r*	*l*	*š*	*š*	*š*	*j*	*j*	*j*
Baškir	*s*	*θ*	*Θ*	*n*	*r*	*l*	*s*	*s*	*s*	*j*	*j*	*j*
Tatar (Siberia)	*s*	*s*	*s*	*n*	*r*	*l*	*č*	*č*	*č*	*j/ǯ*[22]	*j*	*j*
Kumyk	*s*	*s*	*s*	*n*	*r*	*l*	*č*	*č*	*č*	*j/ǯ*	*j*	*j*
Balkar	*s*	*s*	*s*	*n*	*r*	*l*	*č*	*č*	*č*	*ǯ*	*j*	*j*
Karaim	*s*	*s*	*s*	*n*	*r*	*l*	*č*	*č*	*č*	*j*	*j*	*j*
Turkmen	*θ/s*[15]	*θ/s*[15]	*θ/s*[15]	*n*	*r*	*l*	*č*	*č*	*-ǯ-/-č*	*j*	*j*	*j*
Azerbaijani	*s*	*s*	*s*	*n*[21]	*r*	*l*	*č*	*č*	*ǯ*	*j*	*j*	*j*
Gagauz	*s*	*s*	*s*	*n*	*r*	*l*	*č*	*č*	*-ǯ-/-č*	*j*	*j*	*j*
Turkish	*s*	*s*	*s*	*n*	*r*	*l*	*č*	*č*	*-ǯ-/-č*	*j*	*j*	*j*
Khalaj	*s*	*s*	*s*	*n*	*r*	*l*	*č*	*č*	*č*	*j*	*j*	*d*
Čuvaš	*s*[16]	*-s-* (= *-z-*)[18]	*-s-* (= *-z-*)[18]	*n/m*	*r*		*ś*[8]	*ź*[12]	*ź*[12]	*ś*	*j*	*j/v/ø*[4]

	****ń***[23]	****ŕ***	****l’/V̌-***	**** l’/V̄-***	****k-***[25]	****k/V̌-***	****k/V̄-***	****g-***[30]	****g***	****ŋ***
Old Uyghur	*j/ñ*	*z*	*š*	*š*	*k/q*[26]	*k/q*[26]	*k/q*[26]	*k*	*g/ɣ*	*ŋ*
Karakhanid	*j*	*z*	*š*	*š*	*k/q*[26]	*k/q*[26]	*k/q*[26]	*k*	*g/ɣ*[26]	*ŋ*
Yakut	*j/ʃ*	*-h-/-s/-t*	*-h-/-s/-t*	*-h-/-s/-t*	*k/x*[27]	*g/ɣ*[26]	*g/ɣ*[26]	*k*	*ø*	*ŋ*
Tuvin	*j/ʃ*	*-z-/-s*	*-“ž-/-“š*	*-ž-/-š*	*k/x*[17]	*-“g-/-“k*	*-g-/-k*	*k/x*[17]	*-ø-/-g/-ɣ*[26]	*ŋ/ø*[33]
Tofalar	*j*	*-z-/-s*	*-“ǯ-/-“š*	*-ǯ-/-š*	*k/x*[17]	*-”h-/-”k/-”q*[26]	*-g-/-k/-q*[26]	*k/x*[17]	*-ø-/-g/-ɣ*[26]	*ŋ/ø*[33]
Khakas	*j* > *j*[24]	*-z-/-s*	*-z-/-s*	*-z-/-s*	*k/x*[26]	*g/ɣ*[26]	*g/ɣ*[26]	*k*	*-ø-/-g/-ɣ*[26]	*-g-/-ø-/-ŋ*
Šor	*j* > *j*[24]	*-z-/-s*	*-ž-/-š*	*-ž-/-š*	*k/q*[26]	*g/ɣ*[26]	*g/ɣ*[26]	*k*	*-ø-/-g/-ɣ*[26]	*-g-/-ø-/-ŋ*
Oirot (Altai)	*j*	*-z-/-s*	*-ž-/-š*	*-ž-/-š*	*k*	*g*	*g*	*k*	*ø/j/g*[6]	*ŋ*[34]
Kirgiz	*j*	*z*	*š*	*š*	*k*	*-g-/-k-*[2]*/-q*	*-g-/-k-*[2]*/ -q*	*k*	*ø/j/g*[6]	*ŋ*
Uyghur (New)	*j*	*z*	*š*	*š*	*k/q*[28]	*k/q*[28]	*k/q*[28]	*k*	*g/ɣ -k/-q*[31]	*ŋ/n*[35]
Uzbek	*j*	*z*	*š*	*š*	*k/q*[28]	*k/q*[28]	*k/q*[28]	*k*	*g/ɣ -k/-q*[31]	*ŋ/-j-/n*[35]
Kazakh, Karakalpak	*j*	*z*	*s*	*s*	*k/q*[26]	*-g-/-ɣ-/-k-/ -q-*[2]*/-k/-q*[26]	*-g-/-ɣ-/ -k-/-q*[26]	*k*	*-w-/-j-/ -ø/-w/-j*[4]	*ŋ/-j-/n*[35]
Nogai	*j*	*z*	*s*	*s*	*k*	*-g-/-k-*[2]*/-k*	*-g-/-k-*[2]*/-k*	*k*	*-w-/-j-/ -ø/-w/-j*[4]	*ŋ/-j-/n*[35]
Baškir	*j*	*z*	*š*	*š*	*k/q*	*-g-/-ɣ-/-k-/ -q-*[2]*/-k/-q*[26]	*-g-/-ɣ-/-k- -q-/-k/-q*[26]	*k*	*-w-/-j-/ -ø/-w/-j*[4]	*ŋ/-j-/ -g-/n*[35]
Tatar (Siberia)	*j*	*z*	*š*	*š*	*k*	*-g-/-k-*[2]*/-k*	*-g-/-k-*[2]*/-k*	*k*	*-w-/-j-/ -ø/-w/-j*	*ŋ/-j-/ -g-/n*
Kumyk	*j*	*z*	*š*	*š*	*k/g/q*[26]	*-g-/-ɣ-/-k-/ -q-/-k/-q*[26]	*-g-/-ɣ-/ -k-/-q*[26]	*k/g*	*-w-/-j-/ -ø/-w/-j*[4]	*ŋ/-j-/n*[35]
Balkar	*j*	*z*	*š*	*š*	*k/g/q*[26]	*-g-/-ɣ-/-k- /-q-/-k/-q*[26]	*-g-/-ɣ-/ -k-/-q*[26]	*k/g*	*-w-/-j-/ -ø/-w/-j*[4]	*ŋ/-j-/ -g-/n*[35]

	*ń[23]	*ŕ	*l'/Ǔ-	* l'/V̄-	*k-[25]	*k/Ǔ-	*k/V̄-	*g-[30]	*g	*ŋ
Karaim	*j*	*z*	*š*	*š*	*k*	*-g-/-k-/-k*	*-g-/-k-/-k*	*k*	*g/w/j/ø*[4]	*ŋ/-j-/ -g-/n*[15]
Turkmen	*j*	*z*	*š*	*š*	*k/G*[26]	*k/q*[26]	*-g-/-γ-/ -k-/-q*[26]	*g*	*γ/w/j*[6]	*ŋ*[36]
Azerbaijani	*j*	*z*	*š*	*š*	*k/G*[26]	*k/x*[26]	*-g-/-γ-/-k /-x/-G*[7]	*g*	*γ/w/j*[6]*/-ø*[32]	*n/j*
Gagauz	*j*	*z*	*š*	*š*	*k*	*k*	*-g-/-ø-*[7]*/-k*	*g-*	*γ/w/j*[6]*/-ø*[32]	*n/m/j*[6]
Turkish	*j*	*z*	*š*	*š*	*k*	*k*	*-γ-/-k*	*g-*	*γ/w/j*[6]*/-ø*[32]	*n/m/j*[6]
Khalaj	*j*	*z*	*š*	*š*	*k/q*[26]	*k/q*[26]	*k/q*[26]	*k*	*γ/w/j*[8]*/-ø*[32]	*ŋ/j/g/n*[37]
Čuvaš	*j/v/ø*[4]	*r/s*	*l/š*	*l/š*	*k/x*[29]	*-g-/-k/-x*[29]	*-g-/-k/-x*[29]	*k*	*v/ø*[4]	*n/m*[4]

Notices (*EDAL* 145–49)

1. In most languages (except Turkish and Gagauz) > *m-* before a following nasal, with slightly differing rules. The same is valid for (*-*p-*) > *-*b-* > *-*m-* in the second syllable.
2. Voicing occurs on morpheme boundaries and occasionally – in cases of morphological re-analysis (cf. cases like Tatar *sɨpɨr- / sɨbɨr-* ʽto sweep', where *-ɨr-* could have been re-analysed as a causative suffix).
3. Probably dialectal variants, occasionally rendered in orthography.
4. Depending on vocalic environment.
5. After labialized vowels.
6. Depending on vocalic environment and with dialect variation.
7. See more details in *Sravniteľno-istoričeskaja grammatika tjurkskix jazykov: Regionaľnye rekonstrukcii*, red. Ė.R. Tenišev. Moskva: Nauka 2002.
8. **t-*, **d-*, **č-* > *č-* in front of *-i-*, *-ɨ-*.
9. *-d-* in the intervocalic cluster *-*rt-* and in the beginning of auxiliary morphemes.
10. Occasionally recorded as voiceless in Verbitskij's materials.
11. *-d-* in the beginning of auxiliary morphemes.
12. *-*t-*, *-č-* > *-ǯ-* in front of *-i-*, *-ɨ-*.
13. **d-* > *t-* before the following voiceless *-x-*.
14. Variation in dialects and recordings.
15. Variation in dialects.
16. **s-* > *š-* in front of *-i-*, *-ɨ-*.
17. Distribution unclear.
18. *-*s-* > *-ž-* in front of *-i-*, *-ɨ-*.
19. In some dialects lost with compensatory vowel nasalization.
20. In dialects also *ǯ-*.
21. In dialects also variants *ǯ-*, *ž-* before narrow vowels.
22. Normally *j* before *a*, *o*, *ö*, *u*, *ü*, *ɛ*; *ǯ* before *e*, *i*, *ɨ*; but the distribution may be additionally somewhat confused because of dialect variation.
23. In most languages is not distinguished from *-*j-*, but causes nasalization of initial **b-* > *m-*.
24. Frequently causes nasalization of initial **j-* > *n-*.
25. Before back vowels voiceless **k-* and voiced **g-* cannot be distinguished in Proto-Turkic; in this position the symbol **K-* is usually used.
26. Depending on whether the following/preceding vowel is front or back.
27. Depending on whether the following vowel is wide or narrow.
28. Depending on whether the original following/preceding vowel was front or back.
29. Depending on whether the original following/preceding vowel was front or back. **K-* > *j-* before an original diphthong.

30. Reconstructable only before front vowels.
31. Devoicing of final *-*g* is a characteristic feature of the Karluk languages; however, both in Uzbek and in Uyghur it occurs irregularly, depending probably on morphological derivational analogies.
32. In the end of a polysyllabic word.
33. Variation in dialects; in case of disappearance nasalization is preserved on the preceding vowel.
34. In dialects also -*g*- or -*ø*-.
35. In some combinations and in the end of a polysyllabic word.
36. In combinations with palatals – *n*, in some vocalic environments – *j*.
37. Distribution not quite clear.

EDAL 147–48; Dybo & Mudrak 2006, 156

	***i**	***ī**	***ę**	***ę̄**	***e**	***ē**	***a**	***ā**	***ą**	***ą̄**
Old Uyghur	*I*	*i*	*(i)*	*(i)*	*(e)*	*(e)*	*a*	*a*	*a*	***a***
Karakhanid	*I*	*i*	*(i)*	*(i)*	*(e)*	*(e)*	*a*	*a*	*a*	*a*
Yakut	*I*	*ī*	*i*	*ī*	*e*	*ie*	*a*	*ā*	*æ*	*ù*
Tuvin	*I*	*i*	*e*	*e*	*e*	*e*	*a*	*a*	*a*	*a*
Tofalar	*I*	*i*	*e*	*e*	*e*	*e*	*a*	*a*	*a*	*a*
Khakas	*ə*	*ə*	*i*	*i*	*i*	*i*	*a*	*a*	*a*	*a*
Šor	*I*	*i*	*e*	*e*	*e*	*e*	*a*	*a*	*a*	*a*
Oirot (Altai)	*I*	*i*	*e*	*e*	*e*	*e*	*a*	*a*	*a*	*a*
Kirgiz	*I*	*i*	*e*	*e*	*e*	*e*	*a*	*a*	*a*	*a*
Uyghur (New)	*I*	*i*	*e/ä*[2]	*e/ä*[2]	*e/ä*[2]	*e/ä*[2]	*a/e*[6]	*a/e*[6]	*a/e*[6]	*a/e*[6]
Uzbek	*I*	*i*	*e*	*e*	*e/a*[4]	*e*	*a/ɔ*[7]	*a/ɔ*[7]	*a/ɔ*[7]	*a/ɔ*[7]
Kazakh, Karakalpak	*I*	*i*	*e*	*e*	*e*	*e*	*a*	*a*	*a*	*a*
Nogai	*I*	*i*	*e*	*e*	*e*	*e*	*a*	*a*	*a*	*a*
Baškir	*E*	*e*	*i*	*i*	*i*	*i*	*a*	*a*	*a*	*a*
Tatar (Siberia)	*E*	*e*	*i*	*i*	*i*	*i*	*a*	*a*	*a*	*a*
Kumyk	*I*	*i*	*e*	*e*	*e*	*e*	*a*	*a*	*a*	*a*
Balkar	*I*	*i*	*e*	*e*	*e*	*e*	*a*	*a*	*a*	*a*
Karaim	*I*	*i*	*e*	*e*	*e*	*e*	*a*	*a*	*a*	*a*
Turkmen	*I*	*i*	*e*	*i*	*e*	*ā̈*	*a*	*ā*	*a*	*ā*
Azerbaijani	*I*	*i*	*ä/e*[3]	*e*	*ä/e*[4]	*ä/e*[4]	*a*	*a*	*a*	*a*
Gagauz	*I*	*i*	*e*	*e*	*e*	*e*	*a*	*a*	*a*	*a*
Turkish	*I*	*i*	*e*	*e*	*e*	*e*	*a*	*a*	*a*	*a*
Khalaj	*I*	*ī*[?]	*ä*	*ī*[?]	*ä*	*ä*	*a*	*ā*[a]	*a*	*ā*[a]
Čuvaš	*ə/ъ*[1]	*ə/ъ*[1]	*i*	*i*	*a*[5]	*a*[5]	*o*[8]	*o*[8]	*ɨ*	*ɨ*

	***i**	***ī**	***u**	***ū**	***o**	***ō**	***ü**	***ǖ**	***ö**	***ȫ**
Old Uyghur	*ɨ*	*ɨ*	*u*	*u*	*o*	*o*	*ü*	*ü*	*ö*	*ö*
Karakhanid	*ɨ*	*ɨ*	*u*	*u*	*o*	*o*	*ü*	*ü*	*ö*	*ö*
Yakut	*ɨ*	*ɨ*	*u*	*ū*	*o*	*uo*	*ü*	*ǖ*	*ö*	*üö*
Tuvin	*ɨ*	*ɨ*	*u*	*u*	*o*	*o*	*ü*	*ü*	*ö*	*ö*
Tofalar	*ɨ*	*ɨ*	*u*	*u*	*o*	*o*	*ü*	*ü*	*ö*	*ö*
Khakas	*ɨ*	*ɨ*	*u*	*u*	*o*	*o*	*ü*	*ü*	*ö*	*ö*
Šor	*ɨ*	*ɨ*	*u*	*u*	*o*	*o*	*ü*	*ü*	*ö*	*ö*
Oirot (Altai)	*ɨ*	*ɨ*	*u*	*u*	*o*	*o*	*ü*	*ü*	*ö*	*ö*
Kirgiz	*ɨ*	*ɨ*	*u*	*u*	*o*	*o*	*ü*	*ü*	*ö*	*ö*

	**i*	**ī*	**u*	**ū*	**o*	**ō*	**ü*	**ǖ*	**ö*	**ȫ*
Uyghur (New)	*i*	*i*	*u*	*u*	*o*	*o*	*ü*	*ü*	*ö*	*ö*
Uzbek	*i*	*i*	*u*	*u*	*ŭ*	*ŭ*	*u*	*u*	*ŭ*	*ŭ*
Kazakh, Karakalpak	*i*	*ī*	*u*	*u*	*o*	*o*	*ü*	*ü*	*ö*	*ö*
Nogai	*i*	*i*	*u*	*u*	*o*	*o*	*ü*	*ü*	*ö*	*ö*
Baškir	*i*	*i*	*o*	*o*	*u*	*u*	*ö*	*ö*	*ü*	*ü*
Tatar (Siberia)	*i*	*i*	*o*	*o*	*u*	*u*	*ö*	*ö*	*ü*	*ü*
Kumyk	*i*	*i*	*u*	*u*	*o*	*o*	*ü*	*ü*	*ö*	*ö*
Balkar	*i*	*i*	*u*	*u*	*o*	*o*	*ü*	*ü*	*ö*	*ö*
Karaim	*i*	*i*	*u*	*u*	*o*	*o*	*ü*	*ü*	*ö*	*ö*
Turkmen	*i*	*ī*	*u*	*ū*	*o*	*ō*	*ü*	*ǖ/üj*	*ö*	*ö*
Azerbaijani	*i*	*i*	*u*	*u*	*o*	*o*	*ü*	*ü*	*ö*	*ö*
Gagauz	*i*	*i*	*u*	*u*	*o*	*o*	*ü*	*ü*	*ö*	*ö*
Turkish	*i*	*i*	*u*	*u*	*o*	*o*	*ü*	*ü*	*ö*	*ö*
Khalaj	*i*	*ī*[7]	*u*	*ū*[u]	*o*	*ū*[o]	*ü/i*[12]	*ǖ*[ü]/*ī*[12]	*ö/e*[12]	*ī*[e]
Čuvaš	*ə/ъ*[9]	*ə/ъ*[9]	*ъ*[w10]	*ъ*[w10]	*vi-/-u-*[11]	*vu-/-u-*[11]	*ə*[w13]	*ə*[w13]	*vi-/-u-/ -ü-*[14]	*va/-ъ*[w]*va*

Dybo & Mudrak 2006, 157

1. Before and after *š*.
2. The closed variant – in the position of the so called Uyghur Umlaut (before *ä*, *i* in the second syllable).
3. The closed variant – after *j*-, before back affricates and sibilants (*š*, *č*), the Common Oghuz **j* (not before the secondary *-j* < **g*) and *v*; otherwise – *ä*.
4. *-a-* is a rather rare, probably dialectal, variant.
5. > *e* in the vicinity of palatals.
6. The variant *e* – in the position of the so-called Uyghur umlaut (before *ä*, *i* in the second syllable).
7. Details see in Mudrak 2005b, 249–58.
8. In the Upper dialect *o*, in the Lower dialect and in literary Chuvash – *u*; *u* in all dialects adjacent to the reflexes of **g* and **b*.
9. *ъ* – before and after *š*; in Anlaut – *jъ*.
10. **ubC* > **uvC* > *uC*. Labialization of *ъ* is present in the Upper dialect (but one should mention that before and after labials this labialization is automatic).
11. *vụ-* in the Malokaračin dialect.
12. Dialectal variation.
13. Labialization of *ə* is present in the Upper dialect (but one should mention that before and after labials this labialization is automatic).
14. In the vicinity of velars **ö* merges with **u*.

5.2. Survey of the Mongolic comparative phonetics

The first steps in the field of comparative phonetics of the Mongolic languages were made by Ramstedt (1902b). It was followed by detailed monographs of Vladimircov (1929) and Sanžeev (1953). In 1955 Poppe published the book *Introduction to Mongolian Comparative Studies* which represents the best comparative grammar of the Mongolic languages till the present time. Mudrak's dissertation (1983) concentrated on

Mongolic vocalism, while Nugteren's dissertation (2011) clarifies many details in comparative phonetics of the Qinghai-Gansu languages in a broader context of all Mongolic languages. The following survey was prepared by Oleg Mudrak (*EDAL*, 149–156):

pMo.	WrMo.	MMo.	Khl.	Klm.	Bur.	Ord.	Dg.	Mgr.	ŠY	Don.	Bon.	Mog.
**b*[1]	*b*	*b*	*b/-v(-)*	*b/-w(-)*	*b*	*b/-w(-)*	*b/-v-/ -r*	*b-/p-/ -w-/b*	*b-/p-/w-*	*b- (v-) /p-/ -v(u)*	*b- (v-) / p-/-v(ø)- /-b*	*b-/f*
**m*[2]	*m*	*m*	*m, -m/n*	*m, -m/n*	*m, -m/n*	*m, -m/n*	*M, -m/n*	*m*	*m*	*m, -n*	*m*	*m*
**w*[3]	*-u(-)*	*Vu* [Ch]	*ø*	*ø*	*ø*	*ø*	*ø*	*ø*	*ø*	*ø*	*ø*	*ø*
**t*[4]	*t*	*t*	*t*	*t*	*t*	*t/d-*	*t*	*t/d*	*t/d*	*t/-d ~ t-/č*	*t*	*t*
**d*[5]	*d*	*d, -t* [Ch]	*d*	*d*	*d*	*d*	*d, -r*	*d-/t-, d*	*d*	*d/ǯ*	*d*	*d*
**n*	*n*	*n*	*n*	*n*	*n*	*n*	*n*	*n*	*n*	*n*	*n/-ǯ*	*n*
**r*	*r*	*r*	*r*	*r*	*r*	*r*	*r*	*r*	*r*	*r, -ø*	*r*	*r*
**l*[6]	*l*	*l*	*l*	*l*	*l*	*l*	*l*	*l, -r*	*l*	*l, -n*	*l*	*l*
**č*[7]	*č*	*č (ǯe* [Ch]*)*	*c/č*	*c/č*	*s/š*	*č/ǯ-*	*č*	*ć-/-ʒ́*	*č/ǯ*	*č/-ǯ-*	*č/-č– ~ -ǯ-*	*č*
**ǯ*[8]	*ǯ*	*ǯ*	*ʒ/ǯ*	*z/ǯ*	*z/ž*	*ǯ*	*ǯ*	*ʒ́ (ǯ) / ć (č)*	*ǯ / č*	*ǯ*	*ǯ*	*ǯ*
**j*[9]	*j*	*j*	*j*	*j*	*j*	*j*	*j*	*j / ø*	*j*	*j*	*j / ø*	*j*
**s*[10]	*s/š*	*s / š*	*s/š*	*s/š*	*h/š, -t*	*s/š*	*s/š, -r*	*s/ś(š)/ʒ*	*s/š*	*s/š*	*s/š*	*s/š*
**kA*[11]	*q*	*q /-x-* [SH] *x– (q-)* [HY] *q* [Ch]	*x*	*x, ki*	*x*	*x/G-, ki*	*x, k*	*x/G-/ -G-*	*x/G-/ -γ-/-G-*	*q/G-/ -G- (-γ)*	*x/G-*	*q*
**kE*[12]	*k*	*k* *gu* [Ch]	*x*	*k*	*x*	*k/g-*	*k*	*k/g-/-g-*	*k/g/-γ- /-g-*	*k/g-/ -g-*	*k/g-*	*k*
**gA*[13]	*γ*	*q, -x* [Ch] *q/-γ-* [CA]	*g*	*g*	*g*	*g*	*g*	*G/x-*	*G/x-/ -γ-*	*G/q-*	*G/x-*	*γ*
**gE*[14]	*g*	*g*	*g*	*g*	*g*	*g*	*g*	*g/k-*	*g/k-/ -γ-*	*g*	*g*	*g*
**ŋ*[15]	*ŋ*	*ŋ*	*ŋ, -n*	*ŋ*	*ŋ*	*ŋ*	*ŋ*	*ŋ*	*ŋ*	*ŋ*	*ŋ*	*ŋ*
**h*[16]	*ø*	*h-* [IM, MA, PS] *x* [Ch]	*ø*	*ø*	*ø*	*ø*	*x/ś* [Ts, Bt] *ø* [Khailar]	*x/ f/ś (š)*	*h*	*h/x/f/š*	*h/x/f/š*	*ø*
**γ*[17]	*-γ-/-g-*	*-'-* [Ch] *-ø-* [CA]	*ø*	*ø*	*ø*	*ø*	*ø*	*ø*	*ø*	*ø*	*ø*	*ø*

pMo.	WrMo.	MMo.	Khl.	Klm.	Bur.	Ord.	Dg.	Mgr.	ŠY	Don.	Bon.	Mog.
**a*[18]	*a*	*a*	*a*	*a / ä*	*a*	*a*	*a*	*a/ø-/ā/i*	*a*	*a / ə*	*a/e/i*	*a/o/ō*
**u*[19]	*u*	*u*	*u*	*u / ü*	*u*	*u*	*o/wa-/ -(u)a-/u*	*u/ø-/o/ə*	*u/ø-/ə*	*u*	*u/e/a/o*	*u*
**o*[20]	*o*	*o*	*o*	*o / ö*	*o*	*o / u*	*o/wa-/ -(u)a-*	*u/ø-/o, u/ō*	*o/ō*	*o-/o ~ u / -uaN*	*o-/o ~ u*	*o/u*
**i*[21]	*i*	*i*	*i / V*	*i / V*	*e/i/V*	*i / V*	*i / V*	*i / V*	*i / V*	*i / ə / V*	*i / V*	*i / V*
**e*[22]	*e*	*e (~ u)*	*e / i / ö*	*e / i / ö*	*e / ü*	*e/i/ö/ü*	*e / ü*	*ø-/i-/e/ ə/a/i/u*	*e, i-, ø-/o-*	*je-/ie/e /ü*	*e/-iN, -aN*	*e / ü*
**ü*[23]	*ü*	*u*	*ü*	*ü*	*ü*	*ü*	*ü*	*u- (~ ø-) /u / ə / i*	*u- (~ ø-) /u/ə*	*u*	*u-/u, e/ -oŋ*	*ü*
**ö*[24]	*ö*		*ö*	*ö*	*ü*	*ö / ü*	*ü*	*ø-/o-/o/ u/ō*	*ö (o) / ō̈ (ō)*	*o-/o ~ u/-uaN*	*o-/ o ~ u*	*ü, ö*

Notices (*EDAL* 153–56)

1. Voiceless variants in Southern Mongolic languages appear before a voiceless consonant of the next syllable. **-b-* is not fricativized after nasals; in Khalkha, Ordos and Dagur also after *-l-*.
2. Northern languages and Dagur have a variation *-m/-n* at the end of a non-initial syllable.
3. In all modern languages and Central Asiatic Middle Mongolic sources not distinguished from **-ɣ-*. A difference may be observed, however, in Written Mongol and in Chinese Middle Mongol sources, where the sequence *-Vw-* tends to be rendered by a single character as opposed to the sequence *-Vɣu-*, usually rendered by a pair of characters.
4. In Ordos *d-* before the following voiceless stops. In Monguor *d* beforef ollowing fricatives (< **s*, **č*) and intervocalically; voicing did not occur, however, if the initial syllable started with a resonant or *ø-*. In Šira-Yughur **t- > d-* before the following **-k-*; intervocalic voicing occurred more or less in the same positions as in Monguor. Dongxiang also usually has voiced *-d-* between vowels, although dialectal variation is observed; **t- > č-* before **-e-*.
5. Occasional intervocalic devoicing can be observed in Dongxiang (*motu* "tree") and Bonan (*hotoŋ* "feather"). Monguor usually (although not completely consistently) has a devoiced t– in cases when the next syllable started with a voiceless consonant (thus **ZVCV > *CVZV*). In Dongxiang **d- > ǯ-* before **-e-*.
6. Syllable-final *-l* yields *-r* in Monguor, but is preserved in some dialects.
7. In Ordos *-ǯ-* before the following voiceless stops. In Northern Mongolic languages front reflexes are observed before all vowels except **i*, and occasionally also before **i* – in combinations like **čiɣa-*, **čiɣe-*, as well as before the syllables with labial **-u-* or **-ü-*. Monguor and Šira-Yughur have a voiced intervocalic reflex; in a few cases initial voicing (probably assimilative) or spirantizantion are also observed. Dongxiang and Bonan also have intervocalic voicing of **-č-*, but here it appears to be restricted to a position after initial voiceless consonants and **h-*, with some dialectal variation.
8. Devoicing is observed in Monguor and Šira-Yughur before some originally voiceless consonants (which may become voiced themselves, thus **ZVCV > *CVZV*). In Northern Mongolic languages front reflexes are observed before all vowels except **i*, and occasionally also before **i* – in combinations like **ǯiɣa-*, **ǯiɣe-*, as well as before the syllables with labial **-u-* or **-ü-*.
9. In most modern languages **j* is lost before a following **-i-*, frequently resulting in vocalic contractions.
10. Monguor has voicing **-s- > -ʒ-* in the nominal suffix *-su*; it occurs, with few exceptions, after initial voiceless consonants and **h-*, as well as after initial nasals and **j-*. Palatalization **s > š* occurs in all languages before the vowel **i*; in Dongxiang also before **e*.
11. This series of correspondences describes the behaviour of **k* before or after back vowels (or **i* in back-series words). Ordos has a voiced reflex before the following voiceless stop. Monguor and Šira-Yughur have initial *G-* before the following *-(r)d-*, *-ǯ-*. Between vowels **-k-* is usually voiced in these languages (in Šira-Yughur also fricativized: *-ɣ-*), but it can stay voiceless if the first syllable starts with a resonant (therefore in situations when the "transfer of voice" – **ZVCV > *CVZV* – was impossible). In Monguor **k* is palatalized (> *ć*) before **i*. Dongxiang and Bonan have voicing in basically the same positions as in Monguor, but initial voicing may also occur before following resonants, and intervocalic voicing may sometimes occur even after a syllable starting with a resonant.
12. This row of correspondences describes the behaviour of **k* before or after front vowels. The distribution of voiced / voiceless reflexes is similar to **kA*.

13. This row of correspondences describes the behaviour of **g* before or after back vowels (or **i* in back-row words). In Monguor and Šira-Yughur, voiceless *x-* appears before an original voiceless consonant in the next syllable (**ZVCV* > **CVZV*); in Monguor **k* is palatalized (> *ć*) before **i*. Dongxiang and Bonan have voiceless reflexes in monosyllabic stems before a liquid (also in a few other cases, like **gasi-γun,* probably due to assimilation).
14. This row of correspondences describes the behaviour of **g* before or after front vowels. In Monguor and Šira-Yughur, devoicing occurs according to the same rules as for **gA*; other Southern Mongoliic languages, however, do not have devoicing here.
15. In most cases **ŋ* is just a variant of **n* in combinations with velar consonants; it never occurs word-initially or between vowels. However, there is a distinction between **-n* and **-ŋ* in syllable-final position.
16. Initial **h-* is well preserved in Dagur and Southern Mongolic languages. The distribution of reflexes in Monguor, Dongxiang and Bonan depends on following vowels. In principle, the labial reflex is found before **u*, **ü*, sibilant reflexes before **i*, laryngeal and velar reflexes elsewhere.
17. Intervocalic **-γ-* is in complementary distribution with **h-* (and may in fact be reconstructed as **-h-*). It is rendered as *-γ-* (in the back row) or *-g-* (in the front row) in Written Mongol, reflected as *-ø-* (or a laryngeal) in Middle Mongol and is lost in all modern languages, usually causing vowel contractions.
18. In Kalmyk, *ä* before a following **i*. In Monguor the basic reflex is *a*; after palatal affricates and *j* before a lengthened second vowel the reflex is *i*. In a number of disyllabic and trisyllabic words the initial **a-* is lost; on the other hand, **a* is lengthened > *ā* in disyllables with **-u* in the second syllable. Dongxiang and Bonan have a reduction (**a* > *ə*) in a number of disyllabic words, and Bonan has *-i-* after affricates. Moghol has *-o-* before liquids, and a lengthened reflex before **u*, **i* of the second syllable.
19. In Kalmyk *ü* before a following **i*. Dagur has a diphthong before a short *-a-* of the second syllable (the sequence **bu-* in such case > **bua-* > *ba-*), but *-u-* before a lengthened second *-ā-*. Bonan has *-o-* after *G-*, *-a-* after *b-*. Monguor has a frequent reduction **u* > *ə* > *ø*, following a rather complicated system of rules. In Šira-Yughur the reduction occurs before liquids, in non-initial syllables the usual reflex is *ə*.
20. In Kalmyk *ö* before a following **i*. The distribution of reflexes in Dagur is similar to **u*. Ordos has *u* in an open syllable before **-u-* in the following syllable; a similar distribution is observed in Moghol. Monguor has lengthening *o* > *ō* before the following **-u-*; in Anlaut *u-* is preserved only before liquids, otherwise a reduction **u-* > *ø-* occurs; in Inlaut Monguor has *-o-* or *-u-*, with a rather complicated distribution of reflexes. Šira-Yughur has long *ō* in the same context as in Monguor (i.e. before *-u-* of the second syllable); next to **m *o* is sometimes reflected as *ū*. The rules of variation *o* ~ *u* in Dongxiang and Bonan are not quite clear.
21. The vowel **i* is the least stable vowel in all Mongolic languages. It usually becomes assimilated to the vowel of the second syllable (the so called 'breaking of the vowel **i*'). The particular rules of 'breaking' differ from language to language; see the description, e. g., in Poppe 1955.
22. In Khalkha, *i* before back affricates and clusters of *-l-* + affricates. In Kalmyk, *i* after *j-* and before back affricates. In Ordos, *i* after *j-*, *č-*, *ǯ-*. In Monguor, a complicated distribution of reflexes (usually u after labials, and a variety of reflexes before liquids **r, *l*, depending on preceding consonants). Dongxiang has *-e-* after affricates and *j-*, otherwise usually a diphthong *-ie-*. Labialized reflexes in all languages usually occur in Anlaut before an **-ü-* of the next syllable. A labial *u-* (= *ü-*) is regular in Chinese Middle Mongol transcriptions, Muqqa-

dimat al-Adab and in Moghol; Ordos has *ö-* before labials, otherwise *ü-*; Dagur has *e-* before labials, otherwise *ü-*; Dongxiang, Bonan and Monguor have *ø-* before labials, otherwise *u-*; Šira-Yughur has *ø-* before labials, otherwise *o-*.

23. The distribution of reflexes in Monguor and Šira-Yughur is similar to **u*. In Southern Mongolic languages one has to assume an early merger of front and back labialized vowels in many contexts.
24. Ordos has *ü* in open syllables before the following **-ü-*. The reflexes in Southern Mongolic languages are generally the same as those of **o*.

5.3. Survey of the Tungusic comparative phonetics

The first comparative phonetics of the Tungusic languages, including reconstruction of protophonems, was published by Cincius (1949). On the basis of this pioneering study Benzing (1955a, 17–52) brought many corrections and introduced Cincius' conclusions in his reconstruction of the proto-Tungusic morphology. Results of these two fundamental works were developed by Dybo (1990, 1995) and finally by the authors of *Etymological Dictionary of the Altaic Languages*, namely by Dybo & Starostin, who are authors of the following tables and comments (*EDAL*, 156–163):

5.3.1. Correspondences among consonants in the Tungusic languages

Tung.	Evenki	Even	Solon	Negidal	Oroč	Udihe	Ulča	Orok	Nanai	Manchu	Jurchen
**p-*	*h-*[1]	*h-*[2]	*ø-*	*x-*	*x-*[3]	*x-*[4]	*p-*	*p-*	*p-/f-*[5]	*f-*	*f-*
**p*[6]	*p/w/ø*	*b/w/ø*	*b/w/g*	*p/w/ø*	*p/w/ø*	*f/w*	*p/b*	*p/f/b*	*p/f/b*	*f/b*	*f*
**b-*	*b-*	*b-*	*b-*	*b-*	*b-*	*b-*	*b-*	*b-*	*b-*	*b-*	*b-*
**b*[7]	*w/ø*	*w/ø*	*w/ø*	*w/ø*	*b/w/ø*	*b/w/ø*	*b/w/ø*	*b/w/ø*	*b/w/ø*	*b/f/w/ø*	*b/w*
**m-*	*m*	*m*	*m*	*m*	*m*	*m*	*m*	*m*	*m*	*m*	*m*
**m*	*m*	*m*	*m*	*m*	*m*	*m*	*m*	*m*	*m*	*m*[8]	*m*
**t-*	*t*	*t*	*t*	*t*	*t*[9]	*t*[9]	*t*[9]	*t*[9]	*t*[10]	*t*[10]	*t*[10]
**t*	*t*	*t*	*t*	*t*	*t*[9]	*t*[9]	*t*[9]	*t*[9]	*t*[10]	*t*[10]	*t*[10]
**d-*	*d*	*d*	*d*	*d*	*d*[11]	*d*[11]	*d*[11]	*d*[11]	*d*[12]	*d*[12]	*d*[12]
**d*	*d*	*d*	*d*	*d*	*d*[11]	*d*[11]	*d*[11]	*d*[11]	*d*[12]	*d*[12]	*d*[12]
**s-*	*s-*[13]	*h-*[14]	*s-*[15]	*s-*	*s-*	*s-*	*s-*	*s-*	*s-*	*s-/š-*	*s-*
**s*	*s*[13]	*s*[16]	*s*[15]	*s*	*s*	*s, h*	*s*	*s*	*s*	*s*	*s*
**n-*	*n*	*n*	*n*	*n*	*n*	*n*	*n*	*n*	*n*	*n*	*n*
**n*	*n*	*n*	*n*	*n*	*n*	*n*	*n*	*n*	*n*	*n*	*n*
**l-*[17]	*l/n*	*l/n*	*l/n*	*l/n*	*l/n*	*l/n*	*l/n*	*l/n*	*l/n*	*l/n*	*l/n*
**l*	*l*	*l*	*l*	*l*	*l*	*l*	*l*	*l*	*l*	*l*	*l*
**r*	*r*	*r*	*r*	*j, ø*	*j, ø*	*j, ø*	*r*	*r*	*r*	*r*	*r*
**č-*	*č-*	*č-*	*š-*	*č-*	*č-*	*c-*	*č-*	*č-* > *t-*	*č-*[18]	*č-*	*č-*
**č*	*č*	*č*	*š*	*č*	*č*	*s*	*č*	*č* > *t*	*č*	*č*	*č*
**ǯ-*	*ǯ-*	*ǯ-*	*ǯ-*	*ǯ-*	*ǯ-*	*ʒ-*	*ǯ-*	*ǯ-* > *d-*	*ǯ-*[19]	*ǯ-*	*ǯ-*
**ǯ*	*ǯ*	*ǯ*	*ǯ*	*ǯ*	*ǯ*	*ʒ*	*ǯ*	*ǯ* > *d*	*ǯ*[19]	*ǯ*	*ǯ*
**š-*[20]	*č*	*č*	*š*	*č*	*č*	*c*	*č*	*č* > *t*	*č*	*š/s*	*s, c*

Tung.	Evenki	Even	Solon	Negidal	Oroč	Udihe	Ulča	Orok	Nanai	Manchu	Jurchen
*š[20]	č	č	š	č	č	s	č	č > t	č	š/s	s, c
*ń-[21]	ń	ń	ń	ń	ń	ń	ń	ń	ń	ń	ń
*ń	ń	ń	ń	ń	ń	ń	ń	ń	ń	ń	ń
*j	j, ø[22]	j, ø[22]	j, ø[22]	j, ø[22]	j, ø[22]	j, ø[22]	j, ø[22]	j, ø[22]	j, ø[22]	j, ø[22]	j, ø[22]
*k-	k-	k-	k-/x-	k–	k-	k-	k-	k-	k-	k-/x-	k-
*k[23]	k	k	k/x/γ/ø	k/x	k/x/ø	k/x/γ/ø	k/ø	k/ø	k/ø	k/x	k/x
*g-	g	g	g	g	g	g	g	g	g	g	g
*g[24]	γ	γ/w/j/ø	γ/w/j/ø	γ/w/j/ø	γ/w/j/ø	γ/w/j/ø	γ/w/j/ø	γ/w/j/ø	γ/w/j/ø	γ/w/j/ø	γ/w
*x-	ø	ø	ø	ø	ø	ø	x/s[4]	x/s[4]	x/s[4]	ø/x[25]	h
*x[26]	k	k	k/x/γ/ø	k/x	k/x/ø	k/x/γ/ø	x/ø	x/ø	x/ø	k/x	k/x
*ŋ-	ŋ	ŋ	ŋ	ŋ, ni-	ŋ/ń/m[22]	ŋ/ń/m/w[22]	ŋ/ń/m/w[27]	ŋ/m/w[27]	ŋ/m/w/ø[28]	g/w[29]	g/w/ŋ[29]
*ŋ	ŋ	ŋ	ŋ	ŋ	ŋ, ø	ŋ, ø	ŋg, ø	ŋg, ø	ŋg, ø	ŋg, m	ŋ, m

Notices: **1.** ø in the North Baikal dial. **2.** ø- in the Armani and Kamčatska dial. **3.** Sporadically *s-* before *-i-*. **4.** *s-* before **-i-* & **-ia-*. **5.** *p-* in Lit. Nanai & the Naixi dial.; *f-* in the Bikin dial.; in Kur-Urmi usually *x-*, but *f-* appears too, probably thanks to interdialectal interference (the Kur-Urmi dialect historically belongs rather to the northern branch of the Tungusic family than to the Nanai dialect continuum). **6.** Intervocalic **-p-* is usually stable in Ulča, Orok and Nanai (exceptionally it can be changed into *-b-*; in the Bikin dialect of Nanai it is continued as *-f-*). In Evenki and Even the reflexes are stops (Evenki *-p-*, Even *-b-*), or resonants (Evenki & Even *-w-/-ø-*; the reflex *-w-* appears in the sequence of two identical vowels, namely **apa, *epe, *upu, *ipi, *iapa,* also **opa* > **opo*). **7.** The regular continuant is *-w-/-ø-* in all languages with exception of Manchu, where the variants *-b-/-w-* and exceptionally *-f-* are attested. In the Nanaian (= East Tungusic) subbranch the reflex *-b-* is also known in this position, but these examples are usually explainable as Manchu loanwords. In Even, less frequently also in Evenki, the reflex *-γ-* has been also identified, usually before the following *-u-*. On older reconstruction of the Tungusic protolanguage consonantism (Cincius 1949; Starostin 1991) there was preferred the protolanguage projection of the series of correspondences into **-w-*, Benzing (1955) and the authors of *EDAL* reconstruct **-b-*, while **-w-* (and **w-*) is quite eliminated from the proto-Tungusic phonetic inventory. Proto-Tungusic **-b-* is usually well preserved in all languages in clusters with other consonants (**-rb-, *-lb-,* etc.). **8.** *ń* in the palatalizing circumstances. **9.** Sporadically *č* before *-i-*. **10.** *č* before *-i-* and *-ia-*. **11.** *ǯ* before *-i-*. **12.** *ǯ* before *-i-* and *-ia-*. **13.** The Evenki dialects are classified according to reflexes of proto-Tungusic **s*: (a) *s*; (b) *š*; (c) *h*; (d) *s-/-h-*. **14.** In the Armani dialect ø, in Kamčatka *s*. **15.** *š* before *-i-* and *-ia-*; *c* or *č* in some old records. **16.** In the Kolyma-Omolon dialect **-s-, *-s* > *š*; in the Indigirska dialect **-s-* > *-h-*; in the Armani dialect **s* > *č* in the consonant clusters. **17.** In various intensity in all Tungusic languages there is described the tendency **l-* > *n-*. **18.** In the Bikin dialect *č* before *i*, otherwise *c*. **19.** In the Bikin dialect *ǯ* before *i*, otherwise *ʒ*. **20.** The reconstruction of proto-Tungusic **š* was introduced by Mudrak and accepted by Starostin 1991. The authors of *EDAL* mention

that besides Manchu the fricative reflex appears also in the Bikin dialect of Nanai; in all other languages the reflexes of proto-Tungusic **š* & **č* have merged. **21.** The initial **ń-* may be changed into *j-* before **-ia-* and front vowels. In the same positions **n-* and occassionally **ŋ-* have the same reflexes and for this reason it is impossible to formulate the exact rules. **22.** In dependence on the vocalic surroundings. **23.** The intervocalic **-k-* has been usually preserved, but it can be reduced to ø in trisyllabic words in Ulča, Orok and Nanai, occassionally Oroč and Udihe (rarely also in Even). The fricative reflex with unclear distribution also appears in Negidal, Solon, Udihe, Manchu and Jurchen. In some cases in the bi- & trisyllabic forms there are attested the variants with *-G-* in Nanaian (= East Tungusic) languages. Probably, it is an incorrect record of uvular *-q-*. **24**. The intervocalic **-g-* is highly instable. Usually it is articulated as the fricative *-ɣ-* (before the back vowels it is recorded as *-G-, -ɣ-,* or *-ʁ-*) and best preserved is in Evenki. The usual reflexes *-w-/-j-/-ø-* depend on the vocalic surroundings. **25.** The basic Manchu reflex is ø-, exceptionally *j-*, which is sometimes transformed into *n-* before the following nasals. The reflex *x-* is also not rare (in the North Tungusic languages it is reduced to ø-). Jurchen, in reality the archaic varian of Manchu, preserves *h-* in this position, i.e. */x/*. **26.** The intervocalic **-x-* was first reconstructed by Dybo 1990. Its reflexes are different from reflexes of **-k-* in the same languages, preserving **x-*. **27.** In dependence on the vocalic surroundings; *w-* before diphthongs. **28.** *ŋ-* or *m-* in dependence on the vocalic surroundings; *w-* before diphthongs; ø- before the following nasal. **29.** *w-* before diphthongs. **30.** *ŋ* in the sequence **Ciŋi*; ø in trisyllabic suffixed forms and in disyllabic endings in a nasal by Cincius (1949, 44).

5.3.2. Corespondences among the consonant clusters in the Tungusic languages

Tung.	Evenki	Even	Solon	Negidal	Oroč	Udihe	Ulča	Orok	Nanai	Manchu
**pk*	*pk*	*pk*	*kk*	*pk*	*pp*	*kp*	*pp*	*kp*	*kp*	*x*
**pt*	*pt*	*pt*	*kt, tt*	*pt*	*tt*	*pt, tt*				
**rp*	*rp*	*rp*	*rp, pp*	*tp*	*pp*	*kp*	*lp*	*rp*	*rp*	*p, rf*
**lp*	*lp*						*lp*	*lp*	*lp*	*lf, p*
**lb*	*lb*	*lb*	*lb*	*lb*	*bb*	*gb*	*lb*	*lb*	*lb*	*lb, b*
**rb*	*rb*	*rb*	*rb*	*lb, db*	*bb*	*gb*	*rb, lb*	*lb*	*rb, b*	*b*
**rk*	*rk*	*rk*	*rk, kk*	*jk, tk, sk*	*kk*	*k*	*č*	*tt*	*jk*	*č*
**rg*	*rg*	*rg*	*rg, gg*	*jg, dg, ǯg*	*gg*	*g*	*ǯ*	*d*	*jg, g*	*ǯ, nč, nǯ*
**gd*	*gd*	*d*	*dd*	*gd*	*gd*	*gd*	*gd*	*gd*	*gd*	*d*
**kt*	*kt*	*t*	*kt, tt*	*kt*	*kt*	*kt*	*kt*	*kt*	*kt*	*x*
**ks*	*ks*	*s*	*kč, čč, rč*	*ks, xs*	*ks*	*k-h*	*ks*	*sk*	*ks*	*x*
**ls*	*ll, lr, ld*	*lr, ld*	*ld*	*l*	*kt*	*l-h*	*lt*	*lt, l-s-*	*lt*	*x*
**ns*	*nn, nr, nd*	*nr, nd*	*nr, nd*	*n*	*s*	*-h-*	*(n)t*	*t*	*(n)t*	*ng/x*
**ms*	*mn, mr, md*	*mr, md*	*nd*	*mn*	*ms*	*m-h*	*ms*	*ps*	*ms*	*ng/x*
**lg*	*lg*	*lg*	*lg*	*lg*	*gg*	*g*	*ld*	*l,*	*lg*	*lg*
**lk*	*lk*	*lk*	*lx*	*lk*	*kk*	*k*	*lč*	*lt*	*lk*	
**ld*	*ld*	*ld*	*ld*	*ld*	*gd*	*gd*	*ld*	*ld*	*ld, l,*	*nd, n,*
**lt*	*lt*	*lt*	*lt*	*lt*	*kt*	*kt*	*lt*	*lt*	*lt*	*lč*

Tung.	Evenki	Even	Solon	Negidal	Oroč	Udihe	Ulča	Orok	Nanai	Manchu
*ŋg	ŋg, ŋn	ŋg	ŋg	ŋg	ŋg	ŋg	ŋg	ŋg	ŋg	ŋg
*ńg	nŋ, ńŋ	nŋ		nŋ, ńŋ	ŋ	ŋ	ŋg, ńd, ńǯ	nd	ng, nǯ	ng, nǯ
*ńŋ	nŋ, ńŋ	nŋ	ŋ, ń	nŋ, ńŋ	ŋ	ŋ	ń	n	jŋ, ŋ	ń
*nŋ	nŋ	nŋ		nŋ	ŋ	ŋ	ŋg, nǯ	ŋg, nǯ	ŋg, ŋǯ	nǯ
*ŋt	ŋt	ŋt		ŋt	ŋt	ŋt	ŋt		ŋt	nt
*ŋd	ŋd, ŋn	n		ŋn	ŋn	ŋd	ŋd	ŋd	ŋd	ŋd, ŋn
*ŋn	ŋn	ŋn	ŋ	ŋn	ŋn	ŋn	ŋn	ŋn	ŋn	
*ŋń	ŋń	ń	ŋ	ŋń	ŋń	ŋń	ŋń	ŋn	ŋń	ŋǵ
*ŋm	ŋm	ŋm	mm	ŋm	mm	ŋm	ŋm	mŋ	ŋm, mŋ	ŋg
*ŋs	ŋn	ŋr, ŋs	ŋs	ŋn	ŋn, ŋs	ŋd	ŋd	nd	ŋs	ŋs, nn
*ŋk	ŋk	ŋk		ŋk	ŋk	ŋk	ŋk	kk	ŋk	ŋk
*ńk	ŋk	ŋk		ŋk	ŋk	ŋk	nd	nd	nǯ	nč
*nt	nt	nt	nt	nt	nt	nt	nt	tt	nt	nt, nd
*nd	n	n	n	n	n	n	nd	nd	nd	nd
*nb	m	m	m	m	m	m	mb	mb	mb	
*mg	mg, mŋ	mŋ	mm		mm	ŋm	ŋb	mg	mb	ŋgg
*lm	nm	nm	nm	nm	nm	nm	lm	nm	nm	lm
*rm	nm	nm	mm	nm	rm	m	lm	lm	rm	lm
*lŋ	nŋ, ńŋ	nŋ	ŋ, ń	nŋ, ńŋ	ŋ	ŋ	ń	n	jŋ, ŋ	lŋ

5.3.3. Correspondences among vowels in the Tungusic languages

Tung.	Evenki	Even	Solon	Negidal	Oroč	Udihe	Ulča	Orok	Nanai	Manchu	Jurchen
*i	i	i/ɨ[1]	i	i/ɨ[1]	i/ɨ[1]	i/ɨ[1]	i/ɨ[1]	i/ɨ[1]	i/ɨ[1]	i	i
*ü[2]	i	i/ɨ[1]	i	i/ɨ[1]	i/ɨ[1]	i/ɨ[1]	i/ɨ[1]	i/ɨ[1]	i/ɨ[1]	u	u
*u[3]	u	u/ú[1]	u	u/o[1]	u/o[1]	u/o[1]	u/o[1]	u/o[1]	u/o[1]	u	u
*e	e	e	e	e	e	e	e	e	e	e	e
*o	o	o	o	o	o	o	o	o	o	o	o
*a	a	a	a	a	a	a	a	a	a	a	a
*ia[4]	ē	ā̄	'a, ā̄	ā̄	ā̄	ā̄ (eä)	ia	ia	ia, ā̄	'a	'a

Notices: **1.** Depending on the vocalic series, front or back. **2.** The vowel **ü* is relatively rare in words with back vocalism, the reflexes as Evenki *ï* or Nanai *o* are only rare. **3.** In non-initial syllables of the back row in the Nanaian languages has been preferred the record *-u̇-*, not *-o-*; occasionally also in the first syllables. In Evenki the record *u̇* alternates with *ö* (in cyrillic *ɵ*). **4.** The record of the diphthong **-ia-* vacillates in the Nanaian languages between *ia* and *ā̄*, in Udihe also frequently *eä*. In polysyllabic forms a reflex of this diphthong sometimes merge with reflexes of **i*. **5.** In most languages there is a tendency to reduce vowels in non-initial, especially final, syllables. Evenki and Nanai are most conservative in this feature; on the contrary, least conservative are Manchu and Even. In Even a special neutral vowel can replace all vowels in non-initial syllables. In words with the front vocalism the transcription ъ is used, the back vocalism implies the sign ъ̲. **6.** All languages with exception of Manchu and Jurchen preserve the distinction between short and long vowels (although in the case of the diphthong **ia*

the situation becomes obscure in the case of its monophthongization **ia* > *ā*). The long vowels in Manchu are secondary, originating in contractions after the loss of the medial consonants. **7.** Vowels in non-initial syllables have frequently been reduced or changed in agreement with morphological rules. In Manchu and Jurchen the initial vowels are frequently modified under the influence of non-initial ones.

Note: The words with vowels *-a-* or *-o-* in the first or second syllables are always 'back', while the words with *-e-* in the first or second syllables are always 'front'. The vowels *-i- & -u-* are neutral, i.e. they may appear in words of both series. The vowel **ü* usually appears in the words with the fron vocalism, but the combination **aCü & *oCü* are also permissible.

5.4. Comparison between the Altaic branches

5.4.1. System of Gombocz, Ramstedt and Poppe

One of the first serious studies in this field was published by Zoltán Gombocz (in Hungarian 1905; in German 1913). He formulated these rules (p. 36):

Common Turkic **-š-* // Old Čuvaš (> Hungarian) & Čuvaš *-l-*[144] ~ Mongolic **-l-* ~ Tungusic **-l-*.

Common Turkic **-z-* // Old Čuvaš (> Hungarian) & Čuvaš *-r-* ~ Mongolic **-r-* ~ Tungusic **-r-*.

Altaic **δ-* > Common Turkic **j-* // Yakut *s-* // Čuvaš *ś-* ~ Mongolic **d-/*ǯi-* ~ Tungusic **d-/*ǯi-*

Altaic **-δ-* > Common Turkic **-j-*, but Old Turkic *-d-* // Koibal *-z-* // Yakut *-t-* // Čuvaš *-r-* ~ Mongolic **-d-* ~ Tungusic **-d-*.

Altaic **d-* > Common Turkic **d-/*t-* ~ Mongolic **d-/*ǯi-* ~ Tungusic **d-/*ǯi-*.

Altaic **-d-* > Common Turkic **-d-* ~ Mongolic **-d-* ~ Tungusic **-d-*.

His ideas were developed by Ramstedt (1915–1916), who discussed the pair correspondences between Turkic and Mongolic, namely **č* // **č*, **j* // **ǯ* and **j* // **j* respectively. In his following contribution Ramstedt (1916–20) added the untrivial correspondence between Turkic[145] and Mongolic initial zero (but Middle Mongol *h-*, Mon-

144 The correspondence of Čuvaš *-l-* vs. Common Turkic **-š-* (and *-r-* vs. **-z-* respectively) was described already by Schott (1841, 13–14) and Budenz (1864, 243–44). Cf. also Ramstedt 1902, 97. Poppe (1924) explained the correspondence of Common Turkic **š* and Čuvaš *ś* with regard to Old Čuvaš (Old Bulgarian) **-lč-*, really preserved in loans in Hungarian as *-lcs-*, and Mongolic **-lč-* or **-lǯ-*, as a cluster of the primary liquid + affricate.

145 Räsänen (1961) tried to demonstrate the traces of Turkic **h-* < **p-*. Cf. also Pelliot 1925 and Aalto 1955.

guor *f*-) vs. Tungusic **p-* > Nanai *p*-, Manchu *f*-, Evenki *h*-. It was accepted by Poppe (1925), who tried to formulate the following rules for voiceless stops:

Altaic	Common Turkic	Čuvaš	Mongolic	Tungusic
**k*	**k*	*k*	**k*	**x/*ø*
**q*	**q*	*x*	**q*	**x/*ø*
**t*	**t*	*t*	**t*	**t*
**t'*	**t*	*t / tš*	**t*	**č*
**p*	**ø*	**ø*	**ø*	**p*

Later Poppe (1926, 119, 109) excluded the palatalized dental **t'* and expanded the set of correspondences:

Altaic	**p*	**b*	**t*	**d*	**q*	**γ*	**k*	**g*	**δ*	**ǰ*	**y*	**n*	**ń*	**č*	**s*	**ř*	**ľ*
Mongolic	*ø*	*b*	*t*	*d*	*q*	*γ*	*k*	*g*	*d*	*ǰ*	*y*	*n*		*č*	*s*	*r*	*l*
Turkic/Čuvaš	**ø*	**b*	**t*		**q*		**k*		**y*					**č*	**s*	**z/r*	**š/l*

Gustaf J. Ramstedt (1873–1950) gradually prepared the comparative phonetics of Turkic, Mongolic, Tungusic and Korean, but publication of his results was realized by Pentti Aalto only 7 years after Ramstedt's death (Ramstedt 1957a, 80, 85; 137). His synthesis was further developed by Poppe (1960). The following tables offer a summary of the results of these great scholars, based on the binary opposition of voiceless vs. voiced stops and affricates. The reconstruction of the proto-Altaic inventory of phonemes is oriented on Mongolic here.

Correspondences between consonants (Ramstedt 1957a, 80, 85)

Altaic	Turkic	Mongolic	Tungusic	Korean
**k-*	**k-/*q-*	**k-/*q-*	**k-*	*k-*
**-k-*	**-k-/*-q-*	**-k-/*-q-*	**-k-*	*-k-/-kh-*
**g-*	**k-/*q-*	**g-/*γ-*	**g-*	*k-*
**-g-*	**-g-/*-γ-*	**-g-/*-γ-*	**-g-*	*-g-/-k-*
**t-*	**t-*	**t-*	**t-*	*t-*
**-t-*	**-t-*	**-t-*	**-t-*	*-t-/-th-*
**d-*	**j-*	**d-*	**d-*	*t-*
**-d-*	**-d-*	**-d-*	**-d-*	*-d-/-t-*
**p-*	**ø*	*f-/χ-/h-/ś-*	*p-/f-/h-*	*p-*
**-p-*	**-p-*	*ø*	*-p-/-f-*	*-p-/-ph-*
**b-*	**b-*	**b-*	**b-*	*p-*
**-b-*	**-b-*	**-b-*	**-w-*	*-w– (-b-)*
**č-*	**č-*	**č-*	**č-*	*č-*
**-č-*	**-č-*	**-č-*	**-č-*	*-č-/-čh-*
**ǯ-*	**j-*	**ǯ-*	**ǯ-*	*č*
**-ǯ-*	**-j-*	**-ǯ-*	**-ǯ-*	*?*
**j-*	**j-*	**j-*	**j-/ø*	*j-/ø-*
**-j-*	**-j-*	**-j-/*-ø-*	**-j-*	*-j-/-ø-*

Altaic	Turkic	Mongolic	Tungusic	Korean
**s-*	**s-*	**s-, ši-*	*s-/š-/h-*	*s-/h-*
**-s-*	**-s-*	**-s-*	**-s-/-h-*	*-s-/-h-/-ø-*
**m-*	**m-/*b-*	**m-*	**m-*	*m-*
**-m-*	**-m*	**-m-*	**-m-*	*-m-*
**n-*	**j-*	**n-*	**n-*	*n-*
**-n-*	**-n-*	**-n-*	**-n-*	*-n-*
**ń-*	**j-*	**n-*	**ń-*	*n-*
**-ń-*	**-ń-*	**-ń-*	**-ń-*	*-ø-*
**-l-*	**-l-*	**-l-*	**-l-*	*-l-/-r-*
**-l'-*	**-l'-*	**-l-*	**-l-*	*-l-/-r-*
**-r-*	**-r-*	**-r-*	**-r-*	*-l-/-r-*
**-ŕ-*	**-ŕ-*	**-r-*	**-r-*	*-l-/-r-*
**-ŋ-*	**-ŋ-*	**-ø- (= *-γ-) / *-ŋg-*	**-ŋ-*	*-ø-*

Correspondences between vowels (Ramstedt 1957a, 137)

Altaic	Turkic	Mongolic	Tungusic	Korean
**a*	**a*	**a*	**a*	*a*
**o*	**o*	**o*	**o, *u*	*o*
**u*	**u (*o)*	**u*	**u (*o)*	*o*
**ï*	**ï*	**i*	**i*	*i*
**e*	**e, *ä*	**e*	**ę*	*ę (o)*
**ö*	**ö*	**ö*	**u, *u̇*	*u (ę?)*
**ü*	**ü*	**ü (*i)*	**u̇, *i*	*i̯ (u)*
**i*	**i*	**i*	**i, *e*	*i*

5.4.2. System of Illič-Svityč and Cincius

Illič-Svityč (1963, 1965, 1968, 1971) introduced the idea of three series of stops in the Altaic protolanguage. It is interesting that the emphatic and simple voiceless stops had to differ only in anlaut, while their medial continuants should be identical according to Illič-Svityč. Vera Cincius, the author of the first comparative phonetics of the Tungusic languages (1949), accepted the model of Illič-Svityč and with respect to its 'Tungusic orientation' she added the affricate triad **č'* – **č* – **ǯ* (Cincius 1972). She also significantly supplemented the proto-Altaic reconstructions with initial **k'* and **p'* (Cincius 1984b). Anna Dybo (1991) supplemented the Turkic data about the opposition of **t* vs. **d*.

Correspondences between consonants (Illič-Svityč 1971, 168–70)

Altaic	Turkic	Mongolic	Tungusic
**k'-*	**k'-*	**k-*	**x-*
**-k-*	**-k-*	**-k-*	**-k-*
**k-*	**k-*	**k-*	**k-*
**g-*	**k'-*	**g-*	**g-*
**-g-*	**-γ-*	**-γ-*	**-γ-*
**t'-*	**t'-*	**t-, *či-*	**t-*
**-t-*	**-t-*	**-t-, *-či-*	**-t-*
**t-*	**t-*	**d-, *ǯ-*	**d-*
**d-*	**j-*	**d-, *ǯ-*	**d-*
**-d-*	**-δ-*	**-d-, -ǯ-*	**-d-*
**p'-*	**h- > ø-*	**f- > *h- > ø-*	**p-*
**-p-*	**-p-*	**-h-, *-b-*	**-p-*
**p-*	**p- (> b-)*	**f- > *h- > ø-*	**p-*
**b-*	**b-*	**b-*	**b-*
**-b-*	**-β-*	**-b-*	**-b-*
**s-*	**s-*	**s-, *ši-*	**s-* (> Manchu *s-*)
**-s-*	**-s-*	**-s-, -ši-*	**-s-*
**s_{1-}*	**š-* (Čuvaš *š-*) > *s-*	**š-*	**š-* (> Manchu *-š-*)
**-s_{1-}*	**-ś-* (Čuvaš *-š-*) > *-š-*	**-s-*	**-s-?*
**č-*	**č-*	**č-*	**č-*
**-č-*	**-č-*	**-č-* (> *-d* ~ *-s*)	**-č-*
**ǯ-*	**j-*	**ǯ-*	**ǵ-*
**-ǯ-*	**-j-*	**-ǯ-*	**-ǵ-*
**j-*	**j-*	**j-, øi-*	**j-*
**-j-*	**-j-*	**-j-, -γ-*	**-j-*
**-r-*	**-r-*	**-r-*	**-r-* (~ *-l-*)
**-ŕ-*	**-ŕ- > z*, Čuvaš *r*	**-r-*	**-r-*
**l-*	**j-* < **n-* < **l-*	**l-* > **n-*	**l-*
**-l-*	**-l-*	**-l-*	**-l-* (~ *-r-*)
**-Ĺ-*	**-Ĺ- > š*, Čuvaš *l*	**-l-*	**-l-*
**m-*	**m-* ~ **b-*	**m-*	**m-*
**-m-*	**-m-*	**-m-*	**-m-*
**n-*	**j-*	**n-*	**n-*
**-n-*	**-n-*	**-n-*	**-n-*
**ń-*	**j-*	**ń- > n-* (**ńʌ- > ni-*)	**ń-*
**-ń-*	**-ñ- > -n- ~ -j-*	**-ń- > -n-* (**-ńʌ- > -ni-*)	**-ń-*
**-ŋ-*	**-ŋ-*	**-ŋg-, -γ-*	**-ŋ-*

Correspondences between vowels (Illič-Svityč 1971, 171)

Altaic	Turkic	Mongolic	Tungusic
**a*	**a*	**a*	**a*
**ā*	**ā* (Yakut *ā*; Turkmen *ā*) > *a*	**ā > a*	**ā > a* South
**o*	**o*	**o*	**o*
**ō*	**ō* (Yakut *uo*; Turkmen *ō*) > *o*	**ō > o*	**ō > o* South
**u*	**u*	**u*	**u*
**ū*	**ū* (Yakut *ū*; Turkmen *ū*) > *u*	**ū*	**ū > u* South
**ä*	**ä* (Čuvaš *a*; Azerbaijani *ä*)	**e*	**ä*

Altaic	Turkic	Mongolic	Tungusic
*$\bar{a}$	*$\bar{a}$ (Yakut *iä*; Turkmen $\bar{a}$) > *ä*	*$\bar{e}$ > *e*	*$\bar{a}$ > *ä* South
*e	*e* (Čuvaš *i*, *e*; Azerbaijani *e*)	*ė	*ä
*$\bar{e}$	*$\bar{e}$ (Yakut *ī*, *iä*; Turkmen *ī*)	*$\bar{e}$ > *ė > *e*	*$\bar{a}$ > *ä* South
*i	*i, *ï	*i, *ï	*ï (> *e*, *i*)
*$\bar{\imath}$	*$\bar{\imath}$, $\bar{\imath}$ (Yakut *ī*, $\bar{\imath}$; Turkmen *ij*, *ī*)	(*$\bar{\imath}$, *$\bar{\imath}$) > *$\bar{\imath}$ > *i*	*$\bar{\imath}$ (> $\bar{e}$, *ī*) > *ī* > *i* South
*ü	*ü	*ü	*ü (> *i*, *u*)
*$\bar{u}$	*$\bar{u}$ (Yakut $\bar{u}$; Turkmen *üj*)	*$\bar{u}$ > *ū* (> *ū*, *u*)	*$\bar{u}$ (> *ī*, *u*)
*ö	*ö	*ö (> *u*)	*ö (> *u*, *ä*)
*$\bar{o}$	*$\bar{o}$ (Yakut *üö*; Turkmen $\bar{o}$)	*$\bar{o}$ (Monguor $\bar{o}$) > *ö*	*$\bar{o}$ (> *ū*, *u*)

5.4.3. System of Starostin and his followers

Ramstedt and Poppe operated with four Altaic branches, Turkic, Mongolic, Tungusic, Korean, although Ramstedt (1924/1951) also admitted the relationship of Japanese. The same may be said about Illič-Svityč (cf. 1971, 69), although in his table of phonetic correspondences only Turkic, Mongolic and Tungusic are compared. The first steps mapping the regular phonetic correspondences between (Old) Japanese and the four continental Altaic branches were made by Murayama (1958, 1962a, 1966, 1975), Miller (1968, 1971), plus Miller & Street (1975), and Street (1978, 1979, 1980, 1981, 1985). Sergej Starostin was brought to Altaic comparative linguistics through his interest to Japanese language (pre)history. First he concentrated on both internal reconstruction of Japanese, using systematically also Ryukyuan data, and external relations (Starostin 1972, 1975; plus later 1990, 1997). At the 29th session of *Permanent International Altaistic Conference*, held in Taškent in 1986, he briefly presented his first approximation of consonant correspondences between proto-Turkic, proto-Mongolic, proto-Tungusic, Middle Korean and proto-Japanese, leading to the proto-Altaic inventory. In his 1991 monograph he added several protophonemes and vocalic correspondences, all on the basis of rich lexical documentation. Following Illič-Svityč and Cincius, his reconstruction of the proto-Altaic consonant inventory operates with three series of stops and affricates. Let us mention that Griffen (1994, 42) reinterpreted the emphatic stops **k'*, **t'*, **p'* as aspirates **k^h*, **t^h*, **p^h*. He is followed by Bomhard (2017, 9), although he accepts the sound rules formulated by Starostin and his team in *EDAL*.

Correspondences between consonants (Starostin 1986, 104; 1991, 21, 82)

Altaic	Turkic	Mongolic	Tungusic	Middle Korean	Japanese
*k‘	*k-, *-k- (/*-g-)	*k-, *-k-(/*-g-)	*x-, *-k-	k (/h-)	*k
*k	*g-, *-g- (/*-k-)	*k-, *-g-	*k-, *-g-	k-, -ø-/-h-	*k
*g	*g	*g-, *-γ-	*g	k-, -ø-/-h-	*k-, *-ø- (-j-/-w-)
*t‘	*t	*t, č(i)	*t (*čį-)	t-, -t(h)-	*t
*t	*d-, *-t-	*d, č(i)	*d- (*ǯį-), *-t	t-, -r-	*t/*d (-j-)
*d	*j-, *-d-	*d, ǯ(i)	*d (*ǯį-)	t-, -r-	*t/*d (-j-)
*p‘	*ø-/*j-, *-p-	*h- (/*j-), *-γ-/*-b-	*p	p-, -p(h)-	*p
*p	*b	*h-, *-γ- (*-w-)	*p-, -b-	p-, -w-	*p
*b	*b	*b (/*-γ-)	*b-, -w-	p	*p / *b
*-w-	*-ø:-, *-b	*-γ-/*-b-	*-w-/*-j-	-ø:-	*-w- (-ø-)
*č‘	*č	*č	*č	č-, -č(h)-	*t
*č	*d-, *-č-	*d-, *-č-	*ǯ-, -s-	č	*t-, -s-
*ǯ	*j	*ǯ	*ǯ	č	*d (-j-)
*-j-[91]	*-j-	*-j-/*-γ-	*-j-	-j-	*-j- (~ -ø-)
*ʒ-[91]	*j-	*s-	*s-	s-	
*s	*s	*s	*s	s-/h-, -s-	*s
*š[91]	?	*s	*š	?	
*m	*b-, *-m-	*m	*m	m	*m (*-N)
*n	*j-, *-n-	*n	*n	n	*n
*ń	*j-, *-ń-	*n	*n	n-, -ń-	*n-/*m-, *-n-
*l_1	*j-, *-l-	*l-/*n-, *-l-	*l	n, -r-	*n-, *-r-
*-l_2-	*-l_2- = *-ĺ-	*-l-	*-l-	-r-	*-s-
*-r_1-	*-r-	*-r-	*-r-	-r-	*-r-/*-t-
*-r_2	*-r_2- = *-ŕ-	*-r-	*-r-	-r-	*-r-/*-t-
*ŋ	*ø- (~ *j-), *-ŋ-	*ø- ~ *j- ~ *g-, *-ŋg-//*-γ- (/*-n-)	*ŋ	n-, -ŋ- ~ -ø-	*ø-, *-n- ~ *-m-

Note: Protophonemes indicated by [91] are reconstructed only later, by Starostin 1991.

Correspondences between vowels (Starostin 1991, 24, 82)
Following Street (1979), Miller (1985+1986) and Dolgopolsky (1989 ms.), Starostin introduced diphthongs *$\underset{\frown}{ia}$, *$\underset{\frown}{io}$, *$\underset{\frown}{iu}$ (or *$\underset{\frown}{ue}$), *$\underset{\frown}{ua}$.

Altaic	Turkic	Mongolic	Tungusic	Middle Korean	Japanese
*i	*i ~ *į	*i	*i	i	*i
*e	*e	*e	*e	a ~ ə	*i ~ *ə
*ä	*a ~ *ä	*a ~ *e	*ī, *ā	i ~ ă	*a ~ *ə
*ü	*u ~ *ü	*u ~ *ü	*u	u ~ ɨ	*u
*ö	*o ~ *ö	*o ~ *ö	*o	o (~ ɨ)	*ö
*ɨ (*ə)	*ɨ ~ *i	*i	*i ~ *u (*o)	u ~ a	
*u	*u ~ *ü	*u ~ *ü	*u ~ *ü	o	*u ~ *ə
*o	*o ~ *ö	*o ~ *ö	*ŭ (~ ă), *ō	o (u) ~ ă	*u ~ *ə
*a	*a ~ *ä	*a ~ *e	*a ~ *e	a ~ ə	*a ~ *ə
*$\underset{\frown}{ia}$	*a (*ä)	*i ~ *a	*ia	ă ~ i	
*$\underset{\frown}{io}$	*a (*ä)	*i (~ ö)	*o	o	
$\underset{\frown}{iu}$ ($\underset{\frown}{ue}$)	*o ~ *u	*o ~ *u	*i	jə	
*$\underset{\frown}{ua}$	*a (*ä)	*a (*e)	*u	au	

Preparing *Etymological Dictionary of the Altaic languages* (*EDAL*), the authors, Sergej Starostin, Anna Dybo and Oleg Mudrak, made the system of the consonant correspondences more accurate and added the system of continuants of probable and hypothetic consonant clusters.

Correspondences between consonants (Starostin 2000, 222–23; *EDAL* 24–25)

Altaic	Turkic	Mongolic	Tungusic	Korean	Japanese
**k'-*	**k-*	**k-*	**x-*	**k-*	**k-*
**-k'-*	**k*	**-k-, g[Vh] / -g*	**-k-/*-g-*	**-k-, -h-*	**-k-*
**k-*	**g-*	**k-*	**k-*	**k-*	**k-*
**-k-*	**-k-*	**-k-, g[(V)r]*	**-k-*	**ø, h/-k*	**-k-*
**g-*	**g-*	**g-*	**g-*	**k-*	**k-*
**-g-*	**-g-*	**-h-, g[Vh]/-g*	**-g-*	**ø, h/-k*	**-k-*
**t'-*	**t-, dV[+ĺ,ŕ,r]*	**t-/či-*	**t-*	**t-*	**t-*
**-t'-*	**-t-*	**-t-/-či-/-d*	**-t-*	**-t-*	**-t-*
**t-*	**d-*	**t-/či-*	**d-/ǯ(j)*	**t-*	**t-/d[i,ə]*
**-t-*	**-t-*	**-t-/-či-*	**-t-*	**-r-/-t*	**-t-*
**d-*	**j-*	**d-/ǯi-*	**d-*	**t-*	**d-/t[V+*p', *t', *k', *č']*
**-d-*	**-d-*	**-d-/-ǯi-*	**-d-*	**-r-/-t*	**-t-/[*iV,*j]-j-*
**p'-*	**ø-, *j-*	**h-, *j-*	**p-*	**p-*	**p-*
**-p'-*	**-p-*	**-h-,-b- /-b*	**-p-*	**-p-*	**-p-*
**p-*	**b-*	**b-, h-*	**b-*	**p-*	**p-*
**-p-*	**-b-*	**-b-*	**-b-*	**-p-*	**-p-*
**b-*	**b-*	**b-*	**b-*	**p-*	**p-/*b[*a,*ə,*Vj]*
**-b-*	**-b-*	**-h-/[*R]b-*	**-b-*	**-p-*	**-p-/[*iV,*j]w-*
**č'-*	**č-*	**č-*	**č-*	**č-*	**t-*
**-č'-*	**-č-*	**-č-*	**-č-*	**-č-*	**-t-*
**č-*	**d-*	**d-/*č[i]-*	**ǯ-*	**č-*	**t-*
**-č-*	**-č-*	**-č-*	**-s-*	**-č-*	**-s-*
**ǯ-*	**j-*	**ǯ-*	**ǯ-*	**č-*	**d-*
**-ǯ-*	**-j-*	**-ǯ-*	**-ǯ-*	**-č-*	**-j-*
**-j-*	**-j-*	**-j-, -h-*	**-j-*	**-j-, -ø-*	**-j-, -ø-*
**z-*	**j-*	**s-*	**s-*	**s-*	**s-*
**s-*	**s-*	**s-*	**s-*	**s-*	**s-*
**-s-*	**-s-*	**-s-*	**-s-*	**-s-*	**-s-*
**š-*	**s-/*č[*A]*	**s-/*č[*A]*	**š-*	**s-*	**s-*
**-š-*	**-s-*	**-s-*	**-š-*	**-s-*	**-s-*
**m-*	**b-*	**m-*	**m-*	**m-*	**m-*
**-m-*	**-m*	**-m-*	**-m-*	**-m-*	**-m-*
**n-*	**j-*	**n-*	**n-*	**n-*	**n-*
**-n-*	**-n-*	**-n-*	**-n-*	**-n-*	**-n-*
**ń-*	**j-*	**ǯ-*	**ń-*	**n-*	**-m-*
**-ń-*	**-ń-*	**-j-, -n-*	**-ń-*	**-ń-*	**-n-, *-m-*
**l-*	**j-*	**l-, n-*	**l-*	**n-*	**n-*
**-l-*	**-l-*	**-l-*	**-l-*	**-r-*	**-r-*
**l'-*	**j-*	**d-/ǯ[i]*	**l-*	**n-*	**n-*
**-l'-*	**-l'-*	**-l-*	**-l-*	**-r-*	**-s-*
**-r-*	**-r-*	**-r-*	**-r-*	**-r-*	**-r-, *-t-*
**-ŕ-*	**-ŕ-*	**-r-*	**-r-*	**-r-*	**-r-/t[i,u]*
**ŋ-*	**ø-, *j-*	**ø-, *j-/g[u]/n[a,o,e]*	**ŋ-*	**n-*	**ø-/*n-(/*m[j]-)*
**-ŋ-*	**-ŋ-*	**-ŋ-, -n-, -m-, -h-*	**-ŋ-*	**-ŋ-, -ø-*	**-n-, *-m-*

Continuants of consonant clusters (*EDAL* 83–89)

Altaic	Turkic	Mongolic	Tungusic	Korean	Japanese
**rp‘*	**(r)p*	**rb*	**rp*	**rp*	**p*
**rp*	**rp*	**rb*	**rb*	**r?*	**(m)p*
**rb*	**rp/b*	**rb*	**r*		**t*
**rm*	**r*	**rm*	**m*	**m*	
**rt‘*	**rt*	**t*	**[rt]*		
**rt*	**rt*	**d*	**rd*	**r*	**(n)t*
**rd*	**r(V)t*	**rd/(r)ǯ*	**r[d]*		**t*
**rč?*	**rč*	**rč*	**č*	**nč*	**ns*
**rs*	**rs*	**rs*	**rs*	**s*	**s*
**rk‘*	**rk*	**rk*	**rg*	**k*	**k*
**rk*	**rk*	**rg*	**rk (/*gd)*	**(r)k*	**(n)k*
**rg*	**r(V)g*	**rg, *r(V)γ*	**rg*	**r(h)*	**nk*
**ŕm*	**ŕ*	**rm/*rb*	**m*	**r(V)m*	**m*
**ŕk*	**ŕ*	**rk*			
**ŕg*	**ŕ*	**rg*	**rg*	**r*	**(rV)k*
**lp‘*	**lp*	**lb*	**lp*		**(m)p*
**lp*	**lp*	**lb*	**lb*	**(r)p*	**(m)p*
**lb*	**l(Vg), *lb*	**lb*	**l(b)*	**r(V)b, *rm*	**(m)p*
**lm*	**l*	**l(b)*	**lm, ?lVp*	**rVm*	**m*
**lt‘*	**l*	**lt*	**ld*	**r*	**(n)t*
**lt?*	**lt*	**lt*	**ld*	**t?*	**t*
**ld*	**l(d)*	**ld*	**ld*	**r*	**t*
**lč*		**lč*	**lǯ*		**(n)t*
**lń*	**l*		**lń*		**n*
**lk‘*	**l(k)*	**lg*	**lk*	**rk*	**k*
**lk*	**l(k)*	**lg*	**lk*	**rk*	**(n)k*
**lg*	**lg / *l(V)k*	**lg, lVγ*	**lg*	**r*	**(n)k*
**ĺp‘*	**ĺ*	**lb*	**lp*		**(m)p*
**ĺp*	**ĺ*	**lb*	**l(b)*		**s(Vp)*
**ĺb*	**ĺ*	**lb, *lVγ*	**lb*	**r(b)*	**(n)s*
**ĺm*	**ĺm*	**lb*	**lVb*	**rm*	**(n)s*
**ĺd*	**ĺ*	**ld*	**d*		
**ĺn*	**n*	**jVl*	**ln > *lŋ*		
**ĺč‘*	**ĺč*	**lč*	**lč*	**č*	**(n)s*
**ĺč*	**ĺč*	**lč*	**l / *j*	**r*	**(n)s*
**ĺǯ*	**ĺ(č)*	**lǯ*	**l / *j*	**r ~ *č*	**s*
**ĺń*	**ń*	**n*	**lń*		
**ĺk*	**ĺ*	**lg*	**lk*		
**ĺŋ*	**j ~ *ń*	**lVg*	**lŋ*	**r*	
**mp‘*	**m(b)*	**m*	**mp*	**m(p)*	**mp*
**mp*	**p*	**mb*	**mb / *mp*	**p*	**mp*
**mb*	**m*	**mb*	**mb*	**m*	**m*
**mt*	**mt*	**md*	**mt*		**mVt*
**mr*	**rb / *rm*	**nd*	**md*		
**ml*		**mVl*	**lm*	**m*	
**mč*	**nč*	**mǯ*	**m(s)*		**s*
**mń*		**mn*	**mń*		
**mŕ*	**bŕ*	**md*	**nd*		
**ms*	**s*	**bs*			**ns*

Altaic	Turkic	Mongolic	Tungusic	Korean	Japanese
**mk‘*	**mVk*		**mk*		**(ŋ)k*
**mk*	**mg*	**mk / *nk*	**ŋk*		**nk*
**mg*	**mg*	**mg / *ŋg*	**mg*	**ŋ*	**(m)*
**mŋ*	**ŋ*	**m*	**mŋ*		
**nt‘*	**nt*	**nt*	**nt*	**nt*	**nt*
**nt*	**nt*	**nd / *nč*	**nd*	**nt, *ṅ*	**(n)t*
**nd*	**t*	**nd / *nǯ*	**nd*		**n*
**nr*		**ŋgVr*	**ŋg? / *nd*	**nVr*	**t*
**nč‘*	**nč‘*	**nč*	**nč*	**nč*	**(n)t*
**nǯ*	**nč*	**nǯ*	**nǯ*		**(n)s*
**ns*	**s*		**ŋs < *ns*		**s*
**nṙ*	**nṙ*	**r*	*[*ṅr]*	**nVr*	**r*
**nŋ*	**ŋ(g)*	**n / *m*	**nŋ (*ŋṅ)*	**n*	**m, (*n)*
**ṅd*	**ṅ*	**nd*	**nd*		**m*
**ṅŋ*	**ṅ (n)*	**ɣ / *ŋg*	**nŋ (*ṅŋ)*	**ṅ*	**n*
**ŋt‘*	**ŋ(d)*	**n, *ŋd, (ŋ)ǯ(i)*	**nd, *ŋd*	**ŋt*	**nt*
**ŋt*		**d, *nd*	**ŋd*		**nt*
**ŋd*	**t*		**ŋd*	**ṅ*	**n*
**ŋr*	**ŋVr*	**ɣVr / *nd*	**r*	**Vṙ*	
**ŋn*	**n*	*(*n)/*ŋ, *ŋn*	**ŋ(n)*	**ø, *ŋ́*	**n, (*m)*
**ŋč*	**ŋč*	**ǯ*	**s*		**ns*
**ŋṅ*	**n*	**ŋ / *ɣ*	**ŋṅ*	**ŋ*	**(nV)m*
**ŋĺ*	**ŋVĺ*	**ŋl*			**s*
**ŋs*	**ŋs*			**s*	
**ŋk‘*	**ŋ(k)*	**jVk, *nVk*	**ŋ(k)*		**nk*
**ŋk*	**ŋ*	**ŋ(g)*	**ŋk*	**ŋk*	**nk*
**ŋg*	**ŋ(g)*	**ŋg*	**ŋg*	**ŋk, *-ŋ(h)*	**nk*
**jp‘*	**jp‘*	**ɣ, -b*	**p*	**p*	**(m)p*
**jp*		**b*	**b*	**b (ø)*	**w (*j)*
**jb*	**b*	**b*	**(j)b*		
**jm*	**jm*	**(jV)m*	**(j)m*	**m*	**m*
**jt*	**t*	**d*	**t*	**t*	**(i)t*
**jr*	**r*	**r*	**r*	**ø(i)*	**r / *t*
**jl*	**l*	**l*	**l*	**ø(i)*	**r*
**jč*	**č*	**č*	**š*	**č*	**s*
**jǯ*	**(jč)*	**ɣVǯ*	**(j)ǯ*	**č*	**t / *j*
**js*	**js*	**s*			
**jṅ*	**n, *ṅ*	**n/*j/*gVɣ*	**ṅ*	**ø(i)*	**n*
**jṙ*	**ṙ*	**j*	**ǯ*	**ø*	**ø(j)*
**jĺ*	**jĺ*	**l*	**l*	**ø(i)*	**(n)s*
**jk‘*	**(jV)k*	**k*	**(j)k*	**k*	**k*
**jk*	**g (< *k)*	**g*	**jk*		
**jg*	**g*	**ɣ*	**j ~ *g*	**ø(i)*	**ø*
**jŋ*	**j(V)ŋ*	**ŋ/*ɣ/*j*	**ŋ*	**ø(i), *ṅ*	**m, *j, *n*
**bd*			**bd*		**t*
**pr*	**r(b)*	**wr (*ɣVr)*	**rp*	**r*	
**br*	**r*	**wr, *r*	**(bV)r*	**r*	**r*
**bl*	**(bV)l*	**ɣVl / *jVl / *wl*	**l(b)*	**r*	**r*
**bč‘*	**(b)č*	**wč*	**č*		
**bč*		**č*	**[b]š*		**s*
**bǯ*	**(b)j*	**ǯ*	**ǯ*		
**p‘ṙ*	**pVṙ*	**ɣVr*			**t*

Altaic	Turkic	Mongolic	Tungusic	Korean	Japanese
**br̀*	**(b)r̀*	**ɣVr*			**r*
**bĺ*	**(b)Ĺ*		**bl*		**s*
**bs*	**s*	**s*	**bs*		**s*
**bk‘*	**k*	**k*	**bk*		**k(Vp)*
**bg*	**g(j)*	**b / *g*	**bg*		
**bŋ*	**b*	**mVɣ*	**bŋ*		
**gm*?	**gVn*	**ɣVm*	**m*		
**kt‘*	**t*	**gt*	**kt*	**t(h)*	**t*
**kt*	**t*	**gd / *gž*	**gd*	**t(h)*	**t*
**gt*?	**(g)t*	**ɣVž*	**gd*		
**gd*	**d*	**d / *ž*	**gd*	**t(h) / *r*	**(n)t*
**kr*	**r*	**ɣVr*	**kVr*	**(h)*	**kVr*
**gr*	**gVr*	**ɣVr*	**rg*	**rh*	**r*
**kl*?	**gl*	**gl*	**lg, *g(l)*		**(n)k*
**gl*		**wl*	**lg*	**r*	**(ø)*
**kr̀*	**gr / *gVr̀*	**ɣVr*	**kt*	**rk*	**kVr*
**gĺ*	**gVĺ*	**ɣVl*	**l*		
**gn*	**gn*	**ɣVɣ*	**ŋg, *n*		**nk, *-N*
**gs*	**gVs*	**gs*	**ks*	**(h)s*	
**k‘ŋ*	**k*	**ŋg*	**ŋk*		**k*
**kŋ*	**g*	**ŋg*	**ŋ*		
**gŋ*	**g*	**ɣVg*	**ŋ(g)*	**ŋ*	**m*
**gń*	**g*		**ŋń*	**ń*	
**kč‘*			**kč*	**čh*	**t*
**kč*		**gč*	**ks*	**č*	
**kž*	**č*	**gž*	**gž*		
**t‘k‘*?	**t*	**t*	**kt*		
**tk*?	**dg (*gd)*	**d(Vg)*	**kt*		
**dg*?	**gd*	**d*	**(g)d*		
**č‘k*	**čk*		**čVk*	**sk*	
**sk*		**sk*	**sk*		**(n)sVk*

Mudrak (2007, 337–39) expanded and supplemented the set of correspondences of clusters with **ĺ* (cf. Street 1980a, 1985), reinterpreted as **ɬ* according to Mudrak:

Altaic	Turkic	Mongolic	Tungusic	Korean	Japanese
**ɬ-*	**j-*	**d-, *ǰi-*	**l-*	**n-*	**n-*
**-l-*	**-l-, -ɬ*	**-l-*	**-l-*	**-r(-)*	**-s-*
**-ɬ*	**-ɬ*	**-d → *-du*	**-l, -ø*	**-r-, -j/n*	**-s-, -N*
**-ɬp-*	**-l-*	**-lb-*	**-l-*	**-r-*	**-sVp-, -sua*
**-ɬb-*	**-l-*	**-lb-*	**-lb-*	**-r(b)-*	**-s-*
**-ɬm-*	**-ɬ(m)-*	**-lb-*	**-lb-*	**-rm-, -r*	**-ns-*
**-p‘l-*	**-pəɬ(-)*	**-h(a)l-*	**-lb-*	**-păj*	
**-pɬ-*	**-bɬ-*	**-wl-*	**-Ul-*	**-pij*	
**-bɬ-*	**-V̄ɬ-*	**-hu/jil-*	**-bl-*		**-s-*
**-ɬč‘-*	**-ɬ-, -ɬč*	**-lč-*	**-lč-*		**-ns-*
**-ɬč-*	**-ɬ-, -ɬč*	**-lč-*	**-l-, Aj-*	**-r-, -(r)h*	**-(n)s-, -sVr-*
**-ɬǰ-*	**-ɬ-, -ɬč*	**-lǰ-*	**-l-, Aj-*	**-r-, -(r)h*	**-si(r)-*
**-ɬs-*	**-ɬ*	**-(l)su-*		**-r-, -h*	**-nsir-*
**-jɬ-/*-ɬj-*	**-ɬč(-)*	**-jil-*	**-l-*	**-r*	**-s-*

Altaic	Turkic	Mongolic	Tungusic	Korean	Japanese
**-ɬd-*	**-ɬ(-)*	**-ld-*	**-l-*	**-r(-)*	**-sVr-*
**-ɬt(ʲ)-*	**-ɬ(-)*	**-lt-*	**-l-*	**-r(-)*	**-s-*
**-ɬg-*	**-ɬ-*	**-lg-*	**-l-*	**-r-, -V̄r*	**-s-*
**-ɬk-*	**-ɬ-, -ɬk*	**-lg-*	**-lk-*		
**-ɬk'-?*	**-ɬ-*	**-lk-*	**-l-*	**-rh-*	**-s-*
**-ŋɬ-*	**-ŋəɬ*	**-l-*	**-lŋ-, *-ŋl-*		**-s-*
**-kɬ-*	**-gəɬ*	**-l-*	**-Ul-*		
**-gɬ-*	**-V̄ɬ*	**-l-*	**-lg-*		**-s-*

Quite new is the vocalic protolanguage system, reconstructed for both the first and second syllables, where the continuants of the first syllable vowel depend on the vowel of the second syllable. This solution was inspired by reconstruction of the Fenno-Ugric (Uralic) vocalism of the first syllable in dependence on the vowel of the second syllable (cf. Itkonen 1946, 1954, 1962; Illič-Svityč 1971, 163–64; Janhunen 1981).

Correspondences between vowels in dependence on vowels of the following syllable (Starostin 2000, 223–24; *EDAL* 92–93; Dybo & Mudrak 2006, 153)

Altaic	Turkic	Mongolic	Tungusic	MKorean	Japanese
**a-a*	**a (*Pa-/*Pą-)*	**a*	**a*	*A*	**a*
**a-e*	**a-, *ɨ*	**a [i]*	**a*	*A*	**ə*
**a-i*	**e [a]*	**a [e]*	**a*	*A [i]*	**i*
**a-o*	**o (ja, aj)*	**a [i,e]*	**a*	*ă [o]*	**a*
**a-u*	**a*	**a [U]*	**a*	*A [U]*	**u*
**e-a*	**a (*ą) [e]*	**a [e]*	**e*	*A*	**a*
**e-e*	**e (ęR; ja-)*	**e (ja-)*	**e*	*A [i, ɨ]*	**ə*
**e-i*	**e (ęR; ja-)*	**e [i]*	**e*	*ɨ [ɨ, A]*	**i*
**e-o*	**ą [ę]*	**a [e, Pü/Pö, üP/öP]*	**e*	*ă*	**ə [a]*
**e-u*	**e [a, ą]*	**e [a, Po, op]*	**e*	*U [a]*	**u*
**i-a*	**ɨ [i]*	**i*	**i*	*A*	**a*
**i-e*	**e (ęR)*	**e [i]*	**i*	*ɨ [ɨ]*	**i*
**i-i*	**i*	**i [Pe]*	**i*	*I*	**i*
**i-o*	**ɨ*	**i*	**i*	*U [ɨ]*	**i [ə]*
**i-u*	**ɨ [i]*	**i*	**i*	*ɨ [ɨ]*	**u*
**o-a*	**o*	**U*	**U*	*Ă*	**a*
**o-e*	**ö [o]*	**a [ü, ö]*	**U*	*ɨ [U]*	**ə*
**o-i*	**ö [o]*	**ö*	**U*	*U*	**u*
**o-o*	**o*	**u*	**U*	*Ă*	**ə*
**o-u*	**o*	**U*	**U*	*ă [U]*	**u*
**u-a*	**u [o]*	**a [U]*	**U*	*A*	**a*
**u-e*	**ü*	**U [ü, ö]*	**u*	*ɨ [A]*	**ua (Pa-)*
**u-i*	**ü [u]*	**ü [ö]*	**u*	*U [ɨ]*	**u*
**u-o*	**u*	**U*	**U*	*U [ɨ]*	**ə*
**u-u*	**u*	**U*	**U*	*U*	**i*
**ja-a*	**ia, ja [e]*	**a*	**ia (Si)*	*ă (Pa, aP)*	**a*
**ja-e*	**ia, ja*	**i [a, e]*	**i*	*i [(j)ə]*	**ə*
**ja-i*	**ia, ja [e]*	**i [e]*	**ia (Si)*	*ă [(j)ə]*	**i*
**ja-o*	**ia, ja, pa*	**e*	**U*	*ă [U]*	**a*

Altaic	Turkic	Mongolic	Tungusic	MKorean	Japanese
*i̯a-u	*ę, a, Pą	*a, U	*U	U [(j)ə]	*u
*i̯o-a	*ia, ja, pa	*a, U	*U	U [ă]	*a
*i̯o-e	*ę, a, Pą	*e, ö	*U	U [jə]	*ə [u]
*i̯o-i	*ia, ja, pa	*i [e, ö]	*U	U [ă]	*i
*i̯o-o	*o [u]	*ö [ü, U]	*i	i, (j)ə	*ə [u]
*i̯o-u	*u [o]	*e [i, u]	*ia (Si)	ă [u, jə]	*u
*i̯u-a	*i	*U [i]	*U	A	*a
*i̯u-e	*ü, iR [ö]	*ö [ü, U]	*ü, Pu	(j)A [U]	*u [ə]
*i̯u-i	*ü [ö]	*ö [ü, U]	*i (Pu-)	i (i, U)	*i
*i̯u-o	*u [o]	*U	*ü	(j)A [U]	*u [ə]
*i̯u-u	*i	*i [U, ü, ö]	*U	U (i, i)	*u

5.4.4. System of Robbeets

In her monumental review of *Etymological Dictionary of the Altaic Languages* (2003), Martine Robbeets (2005a) determined the most promising etymologies and on their basis she formulated the most probable sound rules leading to the proto-Altaic phonetic inventory. She returned to the binary opposition of the voiceless vs. voiced series of stops and affricates, proposed already by Ramstedt and Poppe. It is interesting that later (2016a, 2017a) she reduced two series of affricates (**č* vs. **ǯ*) to one (**č*). In 2014 she returned to the third velar series, namely the velar fricative **x*, reconstructed already by Miller (1987) and corresponding to **k'* of Illič-Svityč, Cincius and Starostin's team. Rather surprising is her elimination of the correspondence between Turkic **ø-* and Middle Mongol *h-*, Monguor *f-* ~ Tungusic **p-* ~ Korean *p-*, formulated already by Ramstedt and accepted by Poppe, Aalto, Illič-Svityč, Cincius, and Starostin's team.

Correspondences between consonants and consonant clusters (Robbeets 2005a, 373, 376; 2016a, 206–207; 2017a, 907–909).

Altaic	Turkic	Mongolic	Tungusic	Korean	Japanese
*k-	*k-	*k-	*k-	*k-	*k-
*-k-	*-k-	*-k-	*-k-	*-k- (-h-)	*-k-
*g-	*k-	*g-	*g-	*k-	*k-
*-g-	*-k-	*-g-/-ɣ-	*-g-	*-k- (-h-)	*-k-
*x-[14]	*k-	*k-	*x-	*k-/h-	*k-
*-x-[14]	*-k-/*-g-	*-k-/*-g-	*-x-	*-k-	*-k-
*t-	*t-	*t-	*t-	*t-	*t-
*-t-	*-t-	*-t-	*-t-	*-t-	*-t-
*d-	*j-	*d- (ǯi-)	*d-	*t-	*t-/*y-
*-d-	*-d-	*-d- (-ǯi-)	*-d- (-ǯi-)	*-l-	*-t-
*p-	*b-	*p-	*p-	*p-	*p-
*-p-	*-p-	*-ɣ-	*-p-	*-p-	*-p-
*b-	*b-	*b-	*b-	*p-	*p-/*w-
*-b-	*-b-	*-b-/-ɣ-	*-b-	*-p-	*-p-/*-w-
*č-	*č-	*č-	*č-	*c-	*t-

Altaic	Turkic	Mongolic	Tungusic	Korean	Japanese
*-č-	*-č-	*-č-	*-č-	*-c-	*-t-
*ǯ-[05]	*j-	*ǯ-	*ǯ-	*c-	*y-
*-ǯ-[05]	*-j-	*-j-	*-j-	*-l-	*-y-
*dj-[05]	*t-	*d-	*ǯ-	*c-	*t-
*s-	*s-	*s-	*s-	*s-	*s-
*-s-	*-s-	*-s-	*-s-	*-s-	*-s-
*m-	*b-	*m-	*m-	*m-	*m-
*-m-	*-m	*-m-	*-m-	*-m-	*-m-
*n-	*j-	*n-	*n-	*n-	*n-
*-n-	*-n-	*-n-	*-n-	*-n-	*-n-
*ń-[05]	*j-	*ǯ-	*ń-	n-	*-n-
*l-[05]	*j-	*n-	*l-	*n-	*n-
*-l-	*-l-	*-l-	*-l-	*-l-	*-r-
*-lč	*-l(č)/*-š	*-l(č)	*-l(č)	-l(i)	*-si (/ *-ns-[05])
*-r-	*-r-	*-r-	*-r-	*-l-	*-r-
*-r- = *rǰ[05]	*-r_z-	*-r-	*-r-	*-l-	*-r-
*-m$^{(p)}$T-	*-P(C)-	*-PC-	*-PC-	*-pC-	*-np-
*-Rp-	*-RP-	*-RP-	*-RP-	*-Rp-	*-np-
*-n$^{(t)}$K-	*-TC-	*-TC-	*-TC-	*-c-	*-nt-
*-Rt-	*-RT-	*-RT-	*-RT-	*-Rc-	*-nt-
*- ŋ$^{(k)}$T-	*-KC-	*-KC-	*-KC-	*-kC-	*-nk-
*-Rk-	*-RK-	*-RK-	*-RK-	*-Rk-	*-nk-

Notes: [05] indicates the reconstructions of Robbeets from 2005, which are not kept in her reconstructed systems from 2016, 2017. [14] The velar fricative *x was introduced by M. Robbeets only in 2014.

Correspondences between vowels (Robbeets 2005a, 376; 2016a, 207; 2017a, 908–909).

Altaic	Turkic	Mongolic	Tungusic	MKor. < PKor.	OJp. < pJp.
*-a-	*-a-	*-a-	*-a-	-a- < *-a-	-a- < *-a-
*CaCa	*CaC	*CaCa	*CaCa	*CʌCʌ	*CaCa
*-ə-	*-e-	*-e-	*-e-	-e- < *-e-	-a- < *-a-
*-ə-	*-e-	*-e-	*-e-	-e- < *-e-	-o- < *-ə-
*-ɔ-	*-o-	*-o-	*-o-	-wo- < *-o-	-o- < ?*-o-
*-ɔ-	*-o-	*-o-	*-o-	-wo- < *-o-	-u- < *-o-
*-o-	*-ö-	*-ö-	*-ö-	-u- < *-i-	-o- < *-i-
*-u-	*-ü-	*-ü-	*-u- (gü)	-wu- < *-u-	-u- < *-u-
*-ʊ-	*-u-/*-ï-	*-u-	*-u-	-o- < *-ʌ-	-u- < *-u-
*PʊRʊ-	PuR-	*PuRu-	*PuRu-	*PʌRʌ-/*PiRi-	*PaRu- < *PauRu-
*-i-	*-i-/*-ï-	*-i-	*-i-	-i- < *-i-	-i- < *-i-
*a-	*a-	*a-	*a-	a- < *a-	a- < *a-
*ə-	*e-	*e-	*e-	e- < *e-	o- < *ə-
*ɔ-	*o-	*o-	*o-	wo- < *o-	o- < ?*o-
*o-	*ö-	*ö-	*ö-	ø < ?*i-	o- < *i-
*u-	*ü-	*ü-	*u-	wu- < *u-	u- < *u-
*ʊ-	*u-	*u-	*u-	ø < ?*ʌ-	u- < *u-
*i-	*i-	*i-	*i-	i- < *i-	i- < *i-

6. Nominal case system in the Altaic languages

In the present chapter the partial case systems of nouns in the Altaic language family are summarized and reconstructed and finally mutually compared. In the case of their compatibility in a genetic sense a purpose is to determine the hypothetical primary case system of the Altaic protolanguage. For this reason the existing comparisons are verified, and some of them were replaced by new cognates. Special attention was paid to the Korean case system with respect to Old Korean materials. Besides the pronominal system, it seems that the nominal morphology offers one of the strongest arguments for the genetic unity of Turkic, Mongolic, Tungusic, Korean and Japanese languages. Generally, it is possible to say that the Altaic languages represent almost an ideal example of the agglutinative type, in the sense of Skalička's typology, which means that each individual morpheme bears only one grammatical function.

6.1. Nominal case system in the Turkic languages

6.1.1. Nominal case system in the Bulgar-Čuvaš languages (Erdal 1993, 85–98; Benzing 1959, 722–26)

case	gen.	obj. = acc.-dat.	loc.	abl.	com.	causal-final	instr.	dir.	ter.-antesive	adver.
Volga-Bulgar	*-n* or *-ŋ*	*-(n)a / -(n)e*	*-ta*	*-ran/ -ren*						
Čuvaš	*-C-ăn/-ĕn -V-năn/-n*	*-C-a/-e -V-na/-ne*	*-ra/-re/i -R-ta/-te/i*	*-ran/-ren -R--tan/-ten*	*-pa(la)/ -pe(le)* : *pĕrle* „with“	*-šăn / -šĕn* eq. *-śa*	*-ăn*	*-a-lla / -e-lle*	*-(č)čen*	*-la/-le*

Note.: *R* = *r/l/n*.

6.1.2. Nominal case system in the Oghuz languages (Dybo & Levitskaja, *RR* 133–44; Ščerbak, *TJ* 473)

case	genitive	accusative	dative	locative	ablative	instr.	equative	directive
OOsman	*-nUŋ/-uŋ*	*-nI/-(j)I*	*-gA/-(j)A*	*-dA*	*-dAn, -dIn*	*-la(n)/-In*	*-cA*	*-rA*
Turkish	*-nIn/-In*	*-yI/-I*	*-yA/-A*	*-dA, -tA*	*-dAn, -tAn*			
Gagauz	*-nIŋ/-Iŋ -nUŋ/-Uŋ /-An*	*-wI/-I -wU/-U /-A*	*-wA/-A*	*-dA, -tA*	*-dAn, -tAn*			
Azeri	*-nIn/-In -nUn/-Un*	*-nI,-nU/ -I,-U*	*-ja,-jə/ -a,-ə*	*-da,-də*	*-dan,-dən*			

case	genitive	accusative	dative	locative	ablative	instr.	equative	directive
Turkm.	*-nIŋ/-Iŋ* *-nUŋ/-Uŋ*	*-nI/-I*	*-a,-e/-a,-ə*	*-da, -de*	*-dan, -den*			
Salar	*-nI(gI)*	*-nI*	*-gA/-(k)A*	*-dA,-tA*	*-dAn, -tAn*			
Boǰnurdi	*-niŋ/-iŋ*	*-ni/-i*	*-yä/-ä*	*-dä*	*-dän*	*-nän*	ter. *-äčän*	
Khalaj	*ø / -(u)j*	*-ï, -u /-j*	*-qa*	*-ča*	*-da(n)*	*-la*		

Note: Distribution of endings reflects the opposition vowel / consonant of the stem-auslaut.

6.1.3. Nominal case system in the Kypčak languages (Musaev, *RR* 308)

case	genitive	accusative	(dative-)directive	locative	ablative
Baškir	*-tyŋ/-teŋ/-tUŋ* *-dyŋ/-deŋ/-dUŋ* *-δyŋ/-δeŋ/-δOŋ* *-nyŋ/-neŋ/-nOŋ*	*-ty/-te/-tU* *-dy/-de/-dU* *-δy/-δe/-δO* *-ny/-ne/-nO*	*-qa/-kä* *-γa/-gä*	*-tA* *-dA* *-δA* *-lA*	*-tAn* *-dAn* *-δAn* *-lAn*
Nogai	*-tIŋ*, *-dIŋ*, *-nIŋ*	*-tI*, *-dI*, *-nI*	*-qa/-ke, -γa/-ge*	*-ta/-te, -da/-de*	*-tan/-ten, -dan* */-den, -nan/-nen*
Kazakh	*-tIŋ*, *-dIŋ*, *-nIŋ*	*-tI*, *-dI*, *-nI*	*-qa/-ke, -γa/-ge*	*-ta/-te, -da/-de*	*-tan/-ten, -dan* */-den, -nan/-nen*
Kara-kalpak	*-tIŋ*, *-dIŋ*, *-nIŋ*	*-tI*, *-dI*, *-nI*	*-qa/-ke, -γa/-ge*	*-ta/-te, -da/-de*	*-tan/-ten, -dan* */-den, -nan/-nen*
Crimea-Tatar	*-niŋ/-nuŋ*	*-ni/-nu*	*-qa/-ke, -γa/-ge*	*-ta/-te, -da/-de*	*-tan/-ten,* *-dan/-den*
Karaim	*-nIŋ/ -nUŋ*	*-nI/-nU*	*-qa/-ke* *-γa/-ga/-gä/-ge*	*-ta/-te, -da/-de*	*-tan/-ten,* *-dan/-den*
Tatar	*-nuŋ/-neŋ*	*-na/-ne*	*-qa/-kä, -γa/-gä*	*-ta/-tä, -da/-dä*	*-tan/-tän, -dan* */-dän, -nan/-nän*
Baraba	*-tIŋ*, *-dIŋ*, *-nIŋ*	*-tI*, *-dI*, *-nI*	*-qa/-ke, -γa/-ge*	*-ta/-te, -da/-de,* *-na/-ne*	*-tan/-ten, -dan* */-den, -nan/-nen*
Karačai-Balkar	*-nI/-nU*	*-nI/-nU*	*-qa/-ke, -γa/-ge*	*-ta/-te, -da/-de*	*-tan/-ten,* *-dan/-den*
Kumyk	*-nIŋ/ -nUŋ*	*-nI/-nU*	*-qa/-ke, -γa/-ge*	*-da/-de*	*-dan/-den*

Note: Distribution of the endings reflects the opposition voiced / voiceless of the stem-auslaut.

6.1.4. Nominal case system in the Karluk languages (Kormušin, *TJ* 103; Abduraxmanov, *TJ* 66–67; Tuguševa, *TJ* 60; Blagova, *RR* 422–28)

case	genitive	accusative	dative	directive	locative	ablative	instr.
Orkhon-Yenisei	*-yŋ*	*-yγ*	*-qa*	*-γaru*	*-ta/-tä*		*-yn/-in*
Kara-khanid	*-nIŋ / -I(ŋ)* *-nUŋ / -Uŋ* *-ï/-i*	*-n(I)/-ïγ/-ig* *-(u)γ/-(ü)g* *-ï/-i & -u*	*-qa/-kə -γaru/-γərü* *-γa/-gə* *-a/-ə -ra/-ru*		*-da/-də* *-ta/-tə*	*-dIn, -tIn* *-dUn*	*-In, -(u)n*
OUyghur	*-nIŋ*	*-(ï)γ/-(i)g*	*-qa / -kä*	*-γaru/-gärü*	*-tA*	*-tIn*	*-In*
Uyghur	*-niŋ*	*-ni*	*-γa/-gä* *-qa/-qä/-kä*		*-da/-dä* *-ta/-tä*	*-din* *-tin*	
Čaghatai	*-nIŋ*	*-nI*	*-γa/-gä* *-qa/-kä*		*-dA* *-tA*	*-dIn* *-tIn*	
Uzbek	*-niŋ* *-diŋ, -tiŋ*	*-ni* *-di, -ti*	*-ga* *-ka, -qa*	(adv. *-ga*)	*-da* *-ta*	*-dan* *-tan*	

Note: Distribution of the endings reflects the opposition vowel or voiced / voiceless of the stem-auslaut. In Old Uyghur the equative in *-čA* was also used.

6.1.5. Nominal case system in the South Siberian Turkic languages (Kormušin, *RR* 513–20; Baskakov, *TJ* 184; Rassadin, *TJ* 382; Sat, *TJ* 387; Antonov, *TJ* 518)

case	genitive	accusative	dative	locative	ablative	instr.	equative	directive
Khakas	*-ŋIŋ* *-tIŋ*	*-ŋI* *-tI*	*-γa/-ge* *-ha/-ke* *-a/-e*	*-da/-de* *-ta/-te*	*-daŋ/-deŋ* *-taŋ/-teŋ* *-naŋ/-neŋ*	*-naŋ/-neŋ* dial. *-maŋ/-meŋ* *-bla/-ble* *-(p)la/-(p)le* *-mla/-mle*		*-zar/-zer* *-sar/-ser* adv.: *-γar/-ker* *-har/-ker*
Šor	*-ŋIŋ/-ŋUŋ* *-dIŋ/-dUŋ* *-tIŋ/-tUŋ*	*-ŋI/-ŋU* *-dI/-dU* *-tI/-tU*	*-γa/-ge* *-qa/-ke*	*-da/-de* *-ta/-te*	*-daŋ/-deŋ* *-taŋ/-teŋ* *-naŋ/-neŋ*	*-(bI)la/* *-(bI)le* *-m(Il)a/* *-m(Il)e/* *-pa/-pe*		*-(q)ǎra/* *-(k)ěre*
Čulym	*-ŋIŋ/-ŋUŋ* *-tIŋ/-tUŋ*	*-ŋI/-ŋU* *-tI/-tU*	*-γa/-ge* *-qa/-ke*	*-dA* *-tA*	*-dIn/-dUn* *-tIn/-tUn*	dial. *-b(y)la/* *-b(i)le*		*-čA*
Saryg-Yughur	*-ŋIŋ* *-dIŋ* *-tIŋ*	*-ŋI* *-dI* *-tI*	*-γa/-ge* *-qa/-ke* *-q'a/-k'e*	*-da/-de* *-ta/-te*	*-dan/-den* *-dIn* *-tIn*		*-daγ/-deγ* *-taγ/-teγ*	
Fu-Yü-Kirgiz	*-nĭŋ/-niŋ* *-dĭŋ/-diŋ* *-tĭŋ/-tiŋ*	*-nĭ/-ni* *-dĭ/-di* *-tĭ/-ti*			*-nĭn/-nin* *-dĭn/-din* *-tĭn/-tin*			
Altai	*-ŋIŋ* *-dIŋ* *-tIŋ*	*-ŋI* *-dI* *-tI*	*-ga/-ge* *-ka/-ke* *-gO, -kO*	*-da/-de* *-ta/-te* *-dO, -tO*	*-daŋ/-deŋ* *-taŋ/-teŋ* *-naŋ/-neŋ* *-dOŋ,-tOŋ* *-nOŋ*			
Tofalar	*-ŋIŋ/-ŋUŋ* *-tIŋ/-tUŋ*	*-ŋI/-ŋU* *-tI/-tU*	*-γa/-ge* *-qa/-ke*	*-da/-de* *-ta/-te*	*-daŋ/-deŋ* *-taŋ/-teŋ*		part. *-da/-de* *-ta/-te*	prosec. *-ša/-še*
Tuva	*-ŋIŋ/-ŋUŋ* *-dIŋ/-dUŋ* *-tIŋ/-tUŋ*	*-ŋI/-ŋU* *-dI/-dU* *-tI/-tU*	*-ga/-ge* *-ka/-ke*	*-da/-de* *-ta/-te*	*-daŋ/-deŋ* *-taŋ/-teŋ*		dir. II *-d/tIva/e* *-d/tUva/e*	*-če* *-že*

Note: The instrumental ending of the type *-b(I)la/e & -m(I)la/e* has its origin in the postposition *birle(n)* "together" (Kormušin, *RR* 518).

6.1.6. Nominal case system in the North Siberian Turkic languages (Böhtlingk 1851, 159–64; Poppe 1959, 680–81)

case*	accusative	dat.-loc.	part.[1]	ablative	instr.	equative[2]	com.[3]	adverb.[4]
Yakut	*-V-nI/-nU* *-C-I/-U*	*-γA, -χA,* *-gA, -kA;* alt. *-O*	*-tA* *-tO* alt. *-d-*	*-V-ttAn* *-C/Vi̯/u̯-tAn* alt. *-O-*	*-nAn* *-nOn*	*-tAγAr* *-tOγOr* alt. *d/n/l*	*-l͡ĩn/-līn* *-lūn/-lū̃n;* alt. *t/d/n*	*-li/-li* *-lu/-lü;* alt. *t/d/n*
Dolgan	*-V-nï* *-C-ï*	*-ga, -ka*	*-ta* *-da* *-la* *-na*	*-(t)tan*	*-(i)nan*	*-tāγar* *-dāγar* *-lāγar* *-nāγar*	*-t͡ĩn* *-d͡ĩn* *-n͡ĩn* *-l͡ĩn*	

Note: *In Yakut the genitive was lost, but the Turkic genitive ending continues in some adverbs, e.g. *bastyŋ*

"from the beginning", *tastyŋ* "from outside, externally" (R 34; other discussion see Š 34–35). 1) Also called the indetermined accusative (Böhtlingk 1851, 160), originally the locative. 2) Alternatively called casus comparativus; Böhtlingk offered the explanation: *-ta* < **-day* < **-dayγ* (cf. **andayγ* "auf jene Weise") + Mong. instr. **-γar*, while in SG 89 the loc. **-tA* + dir. **-gArU* are here identified. 3) Composed of the Tk. connective suffix **-lï* (cf. OTk. *inili ičili* "sowohl die jüngeren als auch die älteren Brüder") + instr. **-ïn*. 4) Alternatively modalis, originally the old converb: *kihili* < **kišiläyü* "sich wie ein Mensch betragend", from here "auf menschliche Art".

6.1.7. Nominal case system of the reconstructed Turkic protolanguage (Dybo 2006a, 230–33)

case	form	comments
gen.	**-(U)ŋ(i)*	< **-ṅ-ki* (*EDAL* 221); cf. Tg. gen. **-ŋī* and OJp. possessive *-ga* < **-Nka*
accus.	**-(I)g*	
dat.	**-kA*	
term. dat.	**-jA*	
dir.$_1$	**-rA*	
dir.$_2$	**-gArU*	
instr.$_1$	**-(I)n*	
instr.$_2$	**-bile(n)*	grammaticalized from the primary postposition meaning „with" (D 231)
loc.	**-tA*	
abl.	**-tIn*	in Late Common Turkic a new abl. **-tAn* develops from loc. **-tA* + instr. **-(I)n* (D 230–31)
com.	**-lI(g/n) / *-lU(g/n)*	
eq.-prol.	**-čA*	

6.2. Nominal case system in the Mongolic languages

(Poppe 1955, 185–206; *ML*)

case	genitive	accusative	dative-locative			ablative	instr.	comitative	prolative	directive	ter.
WMo.	*-V-jin* *-C-un* *-n-u/-i*[1]	*-V-gi*[1] > *-V-ji* *-C-i*	*-a*	*-da/-ta*	*-du/-tu* *-dur/-tur*		*-V-bar /* *-C-ijar* *-γar/-ger*	*-luγa /* *-lüge* *-tu/-tü* *-tai/-tei*	*-γur/-gür*	*-ru* *uruγu* below	*-ča(γa)*
MMo.	*-V-jin* *-C-un/-in* *-n-u/-i*	*-V-ji* *-C-i*	*-a*		*-dur/-tur*	*-ača/-eče* *-āsa/-ēse*	*-(ba)'ar /* *-ijar* *-(i)'ār /* *-(i)'ēr*	*-lu'a, -lā /* *-lü'e, -lē*			*-ča*
Ordos	*-V̄-gīn* *-Vi̯/u̯-n* *-C/V̆-īn* *-n-i*	*-C/V̆-ī(g)* *-V̄-gī(g)*		*-dān/-tān*	*-du/-tu*	*-ā/ē/ō/ōs*	*-ār /-ēr* *-ōr /-ō̄r*	*-lā/-lē*	*-ūr/-ū̄r*	*-rū/-lū <* **uruγu* below	*-tšē*
Khalkha	*-C/V̆-īŋ* *-V̄-gīŋ* *-Vi̯/u̯-ŋ* *-n-ī*	*-C/V̆-īg* *-V̄-g(i)*		*-dɒ/-tɒ*		*-ā/ē/ō/ōs*	*-ār/-ē/ō̄r* *-n-ī-ōr*		*-ūr/-ū̄r*	*-rū/-lū <* **uruγu* below	*-tsā/-tsē/ā̄*
Buryat East	*-V̆-īŋ* *-V̄-gā̄* *-Vi̯/u̯-ŋ* *-C-ī/-ā̄* *-n-ā̄*	*-C/V̆-īji* *-V̄-ji*		*-da/-ta*		*-āhɒ/-ēhə* *-hā/ē/ō/ō̄*	*-ār/-ē/ō̄r*		*-ūr/-ū̄r*	*-rū/-lū <* **uruγu* below	*-sā/-sē*

case	genitive	accusative	dative-locative			ablative	instr.	comitative	prolative	directive	ter.
Kham-nigan	*-V̌-in* *-V̄-g-A-in* *-C-A-in* *-n-ie*	*-V̌-i* *-V̄-g-ī* *-C-ī*			*-V-du* *-C-tu*	*-V̌-AhA* *-V̄-g-Āha* *-C-Āha*	*-V̌-Ār* *-V̄-g-Ār* *-C-Ār*				
Kalmyk	*-V̌-īn* *-V̄-gīn* *-Vi̯/u̯-n* *-C-īn/-ā̃* *-n-ā̃*	*-C/V̌-īg* *-V̄-g*		*-dɒ/* *-tɒ*		*-ās/-ēs*	*-ār /-ēr*	*-lā̃/-lē̃*	*-ūr/-ū̃r*[dir.]		*-tsē̃*
WOirat	*-V̌-yin* *-V̄-yin* *-C-i-yin* *-n-i*	*-V̄-γ-i* *-C-y-i(gi)*			*-du/* *-d-tu*	*-C-ēce*	*-C-yēr* *-V-bēr*	*-lUγā*			
Dörbet	*-V̌-in* *-V̄-γin* *-C-än* *-n-ā*	*-V̄-g* *-C-ig*				*-V̄-γ-As* *-C-As*	*-C-Ar* *-V̄-γ-Ar*	*-lA*			
Šira Yughur	con. *-V̌-in, -V̄-n, -C-i*				*-di* *-r-ti*	*-V̌-sA*	*-V̌-(γA)-Ar* *-V̄-γĀr* *-C-Ār*	*-lA*			
Monghl. Narin.	con. *-ni*				*-di,* *-du*	*-sa* *-za*	*-ri* *-ra*	*-la*			
Manghr.	con. *-ni*				*-du*	*-sa*		*-la*			
Bonan	con. *-ne*			*-da*		*-sa*					
Santa	con. *-ni*			*-de*		*-se*	com. *-re ~ -le*		*-γun*		
Dagur	*-ī* *-V̌-ji*	*-ī* *-V̌-ji*		*-da/* *-ta*		*-ās/-ē̯s* *-Cy-ies* *-Cw-oos*	*-C/V̌-Ār* *-Cy-ier* *-Cw-oor*				
Moghol	*-ī, -ai*	*-ī, -'i*			*-du/* *-tu*	*-āsa/-ā̃sa*	*-ar*	*-la -lɛi̯*			
Kitan	*-V-an* *-i-n* *-u(ŋ)-un* *-o(ŋ)-on* *-n-i*			*-de* *-o-do*	*-u-dú*		*-er*				
*Mo.	**V-jin* **C-un /* *-ïn* **n-u/-ï*	**-(ï)γï /* **-(i)gi >* **-(i)ji*	**-a/* **-e*	**-da*	**-du* **-dur*	**-(a)ča /* **-(e)če*	**-(i)βar /* **-(i)γar*	**-luγa* **-luγai̯*	**-γur /* **-gür*	**-ru*	**-ča*
**pMo.	**-n*	**-V-gi* **-C-igi*	**-a*	**-da*	**-du* (+*-r*)	**-a/*-e* + **-ča /* **-če*					**-ča*

Note.: 1) Preclassic Mongol literary language.

6.3. Nominal case system in the Tungusic languages

(Benzing 1955a, 60–61, 78–89; AJ 64)

case	Manchu	Nanai	Olča	Orok	Oroči	Udihe	Solon	Negidal	Ewenki	Ewen	*
genitive	*-i /-ni*	*-ŋgi*	*-ŋgi*		*-ŋi*	*-ŋi*	*-ni*	*-ni /-ŋi*	*-ni ~ -ŋī*	*-ŋī*	**-ŋī*
accusative	*-be*	*-wa /-ba*	*-wa / -ba*	*-(w)a / -ba*	*-wa / -ba*	*-w /-b*	*-w /-b*	*-wa /-ba*	*-wa /-ba*	*-w/-m/ -(b)u*	**-ba*
partitive		*-go*	*-ǯu*		*-ja*	*-a*		*-ja*	*-ja*	*-gā-*	
dative	*-de*	*-du*	*-du*	*-du*	*-du*	*-du*	*-du*	*-du*	*-du*	*-du*	**-dua*
ablative	*-ći*	*-duj*	*-duj(i)*	*-ta(k)i*		*-digi*	*-duxi*	*-dukkoj*	*-duk*	*-duk*	**-du.kï*
locative$_1$	*-la*	*-la*		*-la*	*-la*	*-la*	*-lā*	*-lā*	*-lā*	*-lā*	**-lā*
locative$_2$		*-dola -dulə*	*-dola -dula*	*-dula*	*-dula*	*-dula*	*-dulā*	*-dulā*		*-dulā*	**-du.lā*
prolative$_1$	*geli* farther	*ha.li* when			*-li*	*-li*	*-lī*	*-lī*	*-lī*	*-lī*	**-lī*
prolative$_2$					*-duli*	*-duli*	*-dulī*	*-dulī*	*-dulī*	*-dulī*	**-du.lī*
delative							*-lāxi*		*-lə̄k*	*-lə̄k*	**-lā.kï*
dir.-loc.									*-klā*	*-klā*	**-kï.lā*
dir.-prol.									*-klī*	*-klī*	**-kï.lī*
dir. = all.	*-si*	*-ci*	*-ti*	*-tai*	*-ti*	*-tigi*	*-txī / -tixī*	*-tki / -tixi*	*-tkī / -tīkī*	*-tkī / -takī*	**-tï.kī*
instr.	*-i*	*-ʒi*	*-ǯi*	*-ʒu*	*-ź́i*	*-ʒi*	*-ź́i*	*-t /-ʒi*	*-t /-ʒi*	*-c /-ʒi*	**-ǯī*
allative		*-ʒea*							*-gī-*	*-gī-*	**-gī*
elative		*-ʒeaʒi*	*-ǯīǯi*	*-ʒedu*		*-gæʒi*	*-gīź́i*		*-gīt*	*-gīc*	**-gī.ź́i*
com.$_1$							*-gilī*		*-galī*	*-g(a)lī*	**-gï.lī*
com.$_2$				*-ndu*					*-nun*	*-ŋun*	?

6.4. Nominal case system in Late Middle Korean

(LR 70, 187–91; Martin 1992)

case	form	comments
nom.	*-i*	< OKor. 伊 (cf. MCh. reading by Pu 365: **ʔji* = **ʔji* by Starostin < Postclas. Ch. **ʔjij* < Han Ch. **ʔjəj* < (Pre)Clas. OCh. **ʔij*; originally ergative – see V 116; KJ 45); it may be related to Tk. instr. **-(I)n* (R 50: Kor. *mali* „in a word“)
gen.$_1$	*-oy/-uy*	(M 920–21); R 35 & EDAL 221 derive from **-o/uńi*, but it is not confirmed by the OKor. reading **-(h)i* of the sign 矣, used in the *Hyangga*-texts to record the genitive (KJ 54; Pu 367: **i'*< **i'/i'*)
gen.$_2$	*-s*	(M 764–68) < EMKor. 叱 **-tɕhit* < OKor. **-ci/*-ci* (V 159–60 & KJ 53: OJp. < OKor.)
accus.	*-C-ol/-ul // -V-l-ol/-ul*	(M 847–50) < EMKor. 乙 **-ir* (cf. MCh. reading **ʔit* – Pu 367 = Starostin < Han, MCh. **ʔrət*) < OKor. 持 **-ɣir* (VA 224; KJ 54; Miller 1977, 160–61: **-el* < **-hel*; LR 71: OKor. **-hul*); in KJ Vovin thinks about the protoform **-pï-tV*, where **-tV* should be the grammaticalized MKor. pronoun *tye* „that“)
loc.$_1$	*-ay/-ey//-oy/-uy*	(M 495–96) < OKor. 希 **-huy* < ***-kuri* (V 194)
loc.$_2$	*(a)kuy*	cf. OKor. loc. 3 + **-agʌy* (LSJ 34), where the sign + is probably a cursive form of the Chinese sign 中 *zhōng* “centre” (Pu 410: MCh. **truwŋ*), reflecting OKor. **gʌy* or **hʌy* (LSJ 34) according to Old Korean system of transcription *idu* = **-koy* or **-hoy* according to other authors (sr. VH 150)
loc.$_3$	OKor. 良 *-la(ng)*	without continuation in later phases of development of Korean (VH 170; V 149–50)
instr.	*-C-o/u-lwo // -V-lwo*	(M 868–70) < OKor. 留 (cf. MCh. reading by Pu 197: **liw* < **luw* = Starostin: **ləw* < Postclas. Ch. **lhjiw* < Han Ch. **rhjəw* < (Pre)Clas. OCh. < **rhiw*)
com.	*kwa*	< *ko·Wa* (1449) < **kol·Wa* < **kolp-·a* „comparing them“ (M 662)
voc.	*ha // a*	(M 415)

6.5. Nominal case system of Old Japanese

(Vovin 2005, 110–207)

case	form	comments
active	*-i*	< MKor. nom. *-i* (V 117)
genitive	*-nö*	
possessive	MJp. *-ga* < *-Nka*	< **-nVka*, where **-nV–* is probably connected with the gen. *-nö*; Vovin (V 126–27) compares **-nVka* with the gen. in Formosan languages: Saisiyat *noka-*, Paiwan *noa–*
acc.-abs.	*-wo*	
dat.-loc.	*-ni*	< **-nö-i*; cf. loc. *-na* (V 148)
locative	*-na*	
dat.-loc.	*-ra*	cf. OKor. dat.-loc. *-la & -lang* (V 149–53: OKor. > OJp.)
gen.-loc.	*-tu*	cf. MKor. gen. *-s* < OKor. **-ci/*-ci* (V 159–60: OJp. < OKor.)
comitative	*-tö*	cf. WMo. com. *-tu/-tü* m., *-tai/-tei* f., Manchu possessive *-tu* (V 180)
ablative	*-yu/-yuri/-ywo/-ywori*	Ry. abl. *-yoka/-yuka* implies pJp. **-yo/*-yu* (V 191)
directive$_1$	MJp. *-gari* < *-Nkari*	Ry. dir. *-nakai* < **-na-kari* = pJp. loc. **-na* + dir. **-kari* (V 194)
directive$_2$	*-pye*	grammaticalized word *pye* „side“ (V 196)
terminative	*-maNte* > *-made*	
comparative	*-nö/-ni/-nasu/-nösu*	Ry. Šuri *-nu* implies pJp. **-nö*, all from pJp. **nö-Ci–* > OJp. *ni–* „be similar“ (V 210)

6.6. Altaic protolanguage system of nominal cases

(cf. Dybo 2006a, 229–30; Ro 416–21; *EDAL* 221; R 31–62)

case	*Turkic	*Mongolic	*Tungusic	Middle Korean *Old Korean	Old Japanese	*Altaic
nom.	Ø	Ø	Ø	Ø	Ø	Ø
gen.	*-ŋ(i)*	*-n*	*-ŋi*		*-no* : *-nV-ka*$^{poss.}$	*-ńV*(+ *-ki*)
acc.			*-ba* / *-be*		*-wo*	*-be*
part.	*-(I)g*	*-V-gi* /*-C-igi*[1]	*-ga*	?*-ol/-ul* < **-γïr*^{KJ} = **-hul*^{LR}	*-nV-ka*$^{poss.}$	*-ga*
dat.-loc.	*-tA*$^{loc./abl.}$	*-da* /*-du-r*$^{dat./loc.}$	*-du*$^{dat.}$/*-dā-*$^{loc.}$		*-tu*$^{loc./atr.}$	*-du* /*-da*
dat.-dir.	*-kA*$^{dat.}$		*-kī*$^{dir.}$			*-k‘V*
dat.-instr.	*-(I)n*$^{instr.}$			?*-i*$^{nom. < erg.}$	*-ni*$^{dat./loc.}$	*-nV*
instr.-abl.	*-(j)A*$^{term.dat.}$		*-šï*$^{instr.}$/*-gī-šï*$^{el.}$		*-yu*$^{abl.}$	*-šV*
com.-loc.	*-lI(g)*	*-luγa*$^{com.}$	*-lā*$^{loc.}$/*-lī*$^{prol.}$	**-la(ng)*$^{dat./loc.}$	*-ra*$^{dat./loc.}$	*-lV*
com.-eq.	*-čA*$^{ek.}$	*-ča*$^{abl.}$/*-čaγa*$^{ter.}$		*-s*$^{gen.}$ < **-ci/*-ci*	*-tö*$^{com.}$	*-č‘a*
?com.[2]		*-tu/-tü*$^{com.}$	Ma. *-tu*$^{poss.}$		*-tö*$^{com.}$	*-tu*
all.	*-gA-rU*$^{dir.}$	?*-a* < **-γa*$^{dat./loc.}$ cf. WMo. *qami-ga* “where” (R 40)	*-gī*$^{all.}$/*-gī-*$^{loc.}$	*-oy/-uy*$^{loc.}$ < **-huy* < ***-kuri*	*-Nkari*$^{dir.}$ < **-na* + **kari*	*-gV*(+ *rV*$^{dir.}$)
dir.	*-rA*$^{dir.}$	*-ru*$^{dir.}$		*-lwo*$^{instr.}$		*-rV*

Notes: 1) Vovin (V 177) derives Common Mongolic acc. **-(i)γi/*-(i)yi* from **-(i)βi*, to connect it with the accusative in Tg. **-ba /* -be* and Old Japanese *-wo*. 2) Vovin (V 180) connects Old Japanese comitative *-tö* with the Written Mongol comitative in *-tu/-tü* and the isolated Manchu possessive in *-tu*.

7. Altaic pronominal system

7.1. Personal pronouns in the Altaic languages

This chapter gives a summary of the case system of personal pronouns in the five branches of the Altaic languages (until now, this kind of synopsis had not been realized, at least in any individual branch), reconstructs pronominal declension for the daughter protolanguages, and then compares these protosystems. The final result is an attempt to reconstruct the Altaic pronominal protosystem.

7.1.1. Personal pronouns of the Turkic languages

7.1.1.1. Personal pronouns in Čuvaš
Lit.: Clark 1998, 439; Andreev 1997, 487.

	nom.	gen.	obj. = ac.-dat.	loc.	abl.	instr.	causal-final
1 sg.	*epĕ*	*manăn*	*mana*	*manta*	*mantan*	*manpa*	*manšăn*
2 sg.	*esĕ*	*sanăn*	*sana*	*santa*	*santan*	*sanpa*	*sanšăn*
3 sg.	*văl*	*unăn*	*ăna*	*unta*	*untan*	*unpa*	*unšăn*
1 pl.	*epir*	*pirĕn*	*pire*	*pirte*	*pirten*	*pirpe*	*pirĕnšĕn*
2 pl.	*esir*	*sirĕn*	*sire*	*sirte*	*sirten*	*sirpe*	*sirĕnšĕn*
3 pl.	*vĕsem*	*vĕsen(ĕn)*	*vĕsene*	*vĕsenče*	*vĕsenčen*	*vĕsempe*	*vĕsemšĕn*

7.1.1.2. Personal pronouns in the Oghuz languages
Lit.: Doerfer 1988b, 103; Dybo – Levitskaja 2002, 145–154.

1 sg.	nom.	gen.	ac.	dat.	loc.	abl.	instr.	equ.
OOsman	*ben/men*	*binüm/benüŋ*	*bini*	*baŋa/maŋa*				
Turkish	*ben*	*benim*	*beni*	*bana*	*bende*	*benden*		*bence*
Gagauz	*ben/bän*	*benim*	*beni*	*bana*	*bendä*	*bendän*		
Azeri	*män*	*mänim*	*mäni*	*mänä*	*mändä*	*mändän*		
Turkmen	*men*	*meniŋ*	*meni*	*maŋa*	*mende*	*menden*		
Salar	*män*	*meni(gi)*	*meni*	*maŋa*	*mente*	*menten*		
Khalaj	*män*	*mänüm*	*mā̃ni*	*mäńä*	*mā̃ndíčä*	*mā̃ndä*	*mā̃ndílä*	*mā̃ndítäki*

2 sg.	nom.	gen.	ac.	dat.	loc.	abl.	instr.	equ.
OOsman	*sen/sin*	*sinüŋ*	*sini*	*saŋa*				
Turkish	*sen*	*senim*	*seni*	*sana*	*sende*	*senden*		*sence*
Gagauz	*sen/sän*	*senin*	*seni*	*sana*	*sendä*	*sendän*		
Azeri	*sän*	*sänim*	*säni*	*sänä*	*sändä*	*sändän*		
Turkmen	*sen*	*seniŋ*	*seni*	*saŋa*	*sende*	*senden*		
Salar	*sän*	*seni(gi)*	*seni*	*saŋa*	*sente*	*senten*		
Khalaj	*sän*	*sänüŋ*	*sā̃ni*	*säńä*	*sā̃ndíčä*	*sā̃ndä*	*sā̃ndílä*	*sā̃ndítäki*

1 pl.	nom.	gen.	ac.	dat.	loc.	abl.	instr.	equ.
OOsman	*biz*	*bizüm/biznüŋ*	*bizi*	*bize/bizge*				
Turkish	*biz*	*bizim*	*bizi*	*bize*	*bizde*	*bizden*		*bizce*
Gagauz	*biz*	*bizim*	*bizi*	*bizä*	*bizdä*	*bizdän*		
Azeri	*biz*	*bizim*	*bizi*	*bizä*	*bizdä*	*bizdän*		
Turkmen	*biδ*	*biδiŋ*	*biδi*	*biδe*	*biδde*	*biδden*		
Salar	*pis(il)er*	*pisi(r)ni(gi)*	*pisi(r)ni*	*pisere*	*pise(r)te*	*pise(r)ten*		
Khalaj	*biz*	*bizüm*	*bizi*	*bizkä*	*bizdíča*	*bizdä*	*bizdílä*	*bizdítäki*

2 pl.	nom.	gen.	ac.	dat.	loc.	abl.	instr.	equ.
OOsman	*siz*	*sizüŋ*	*sizi*	*size*				
Turkish	*siz*	*sizin*	*sizi*	*size*	*sizde*	*sizden*		*sizce*
Gagauz	*siz*	*sizin*	*sizi*	*sizä*	*sizdä*	*sizdän*		
Azeri	*siz*	*sizin*	*sizi*	*sizä*	*sizdä*	*sizdän*		
Turkmen	*siδ*	*siδiŋ*	*siδi*	*siδe*	*siδde*	*siδden*		
Salar	*sele(r)*	*seli(r)ni(gi)*	*seli(r)ni*	*selere*	*sele(r)te*	*sele(r)ten*		
Khalaj	*siz*	*sizüń*	*sizi*	*sizkä*	*sizdíča*	*sizdä*	*sizdílä*	*sizdítäki*

3 sg.	nom.	gen.	ac.	dat.	loc.	abl.	instr.	equ.	dir.
OOsman	*o, ol*	*anuŋ/ onuŋ*	*anï/onï*	*aŋa/ ona*	*anda*	*andan/ ondan*	*anïn/ onunla*	*anca*	*aŋar*
Turkish	*o*	*onun*	*onu*	*ona*	*onda*	*ondan*			
Gagauz	*o*	*onun*	*onu*	*ona*	*onda*	*ondan*			
Azeri	*o*	*onun*	*onu*	*ona*	*onda*	*ondan*			
Turkmen	*(š)o, (š)ol*	*(š)onuŋ*	*(š)onï*	*(š)oŋo*	*(š)ondo*	*(š)ondon*			
Salar	*vu*	*ani(gi)*	*ani*	*aŋa/ana*					
Khalaj	*(b)ǭ*[1]	*(m)unuń*	*(m)ūni*	*(m)uńa*	*(m)ūndíča*	*(m)ūnda*	*(m)ūndíla*	*(m)ūndítäki*	

1) *ǭ* “that”; *bǭ* “this”.

3 pl.	nom.	gen.	ac.	dat.	loc.	abl.	instr.	equ.
OOsman	*olar/ a(n)lar*	*anlaruŋ*	*anlarï*		*onlarda*	*onlardan*		
Turkish	*onlar*	*onlarïn*	*onlarï*	*onlara*	*onlarda*	*onlardan*		
Gagauz	*onnar*	*onnarïn*	*onnarï*	*onnara*	*onnarda*	*onnardan*		
Azeri	*onlar*	*onlarïn*	*onlarï*	*onlara*	*onlarda*	*onlardan*		
Turkmen	*olor*	*oloruŋ*	*olorï*	*olora*	*olorda*	*olordan*		
Salar	*vule(r)*	*vule(r)ni(gi)*		*vulere/ vulara*	*vule/a(r)te*	*vule/a(r)ten*		
Khalaj	*(b)ullar*[1]	*(b)ullaruń*	*(b)ullari*	*(b)ullarqa*	*(b)ullárča*	*(b)ullarda*	*(b)ullárla*	*(b)ullártäki*

1) *ullar* “they, those”; *bullar* “these”.

7.1.1.3. Personal pronouns in the Kipčak languages

Lit.: Baskakov 1966, 307–308; *Id*., 1997, 269–270; Berta 1998, 289; Csató – Karakoç 1998, 337; Čečenov 1997, 114; Čečenov – Axmatov 1997, 283; Dmitrieva 1966, 163; Izidinova 1997, 306; Kajdarov, 1997, 250–51; Kenesbaev – Karaševa 1966, 327; Levitskaja 1997, 324; Musaev 1977, 41.

1 sg.	nom.	gen.	ac.	dat.-dir.	loc.	ablative	instr.
Cumanic	*men*	*meniŋ/m*	*meni*	*maŋa/maγa/ maa*	*mende*	*menden*	
Baškir	*min*	*miněŋ*	*mině*	*miŋe*	*minde*	*minen*	
Nogai	*men*	*menim*	*meni*	*maγa*	*mende*	*mennen*	
Kazakh	*men*	*meniŋ*	*meni*	*maγan*	*mende*	*menen*	*menimen*
Karakalpak	*men*	*meniŋ*	*meni*	*maγan*	*mende*	*mennen*	
Crim. Tatar	*men*	*meni(m)*	*meni*	*maŋa*	*mende*	*menden*	
Karaim[G]	*men*	*menin/m*	*meni*	*mana*, [Tr]*ma(j)a*	*mende*	*menden*	*menimba*
Volga Tatar	*min*	*miněm*	*mině*	*miŋa*	*minde*	*minnen*	
Baraba	*män/men*	*miniŋ*	*mini*	*maŋa*	*mindä/ min(n)än*	*mindän*	
Karač.-Balk.	*men*	*meni*	*meni*	*manga*	*mende*	*menden*	
Kumyk	*men*	*meni*	*meni*	*maγa*	*mende*	*menden*	

G = dialect from Galicia; Tr = dialect from Trakai

2 sg.	nom.	gen.	ac.	dat.-dir.	loc.	ablative	instr.
Cumanic	*sen*	*seniŋ/g*	*seni*	*saŋa/sana/saa*	*sende*	*senden*	
Baškir	*hin*	*hiněŋ*	*hině*	*hiŋe*	*hinde*	*hinen*	
Nogai	*sen*	*seniŋ*	*seni*	*saγa*	*sende*	*sennen*	
Kazakh	*sen*	*seniŋ*	*seni*	*saγan*	*sende*	*senen*	*senimen*
Karakalpak	*sen*	*seniŋ*	*seni*	*saγan*	*sende*	*sennen*	
Crim. Tatar	*sen*	*seniŋ*	*seni*	*saŋa*	*sende*	*senden*	
Karaim[G]	*sen*	*senin*	*seni*	*sana*, [Tr]*sa(j)a*	*sende*	*senden*	*senimba*
Volga Tatar	*sin*	*siněm*	*sině*	*siŋa*	*sinde*	*sinnen*	
Baraba	*sen/sin*	*siniŋ*	*sini*	*saŋa*	*sindä/sin(n)än*	*sindän*	
Karač.-Balk.	*sen*	*seni*	*senni*	*sanga*	*sende*	*senden*	
Kumyk	*sen*	*seni*	*seni*	*saγa*	*sende*	*senden*	

1 pl.	nom.	gen.	ac.	dat.-dir.	loc.	ablative	instr.
Cumanic	*biz*	*biziŋ/bizim*	*bizni*	*bizge*	*bizde*	*bizden*	
Baškir	*běð*	*běðděŋ*	*běðděˇ*	*běðge*	*běðde*	*běðden*	
Nogai	*biz*	*bizim*	*bizdi*	*bizge*	*bizde*	*bizden*	
Kazakh	*biz(der)*	*bizdiŋ*	*bizdi*	*bizge*	*bizde*	*bizden*	*bizden*
Karakalpak	*biz*	*biziŋ*	*bizdi*	*bizge*	*bizde*	*bizden*	
Crim. Tatar	*biz*	*bizim*	*bizni*	*bizge*	*bizde*	*bizden*	
Karaim[G]	*biz*	*biz(n)in*	*bizni*	*bizge*	*bizde*	*bizden*	*biznimbe*
Volga Tatar	*běz*	*bězneŋ*	*běznˇe*	*bězge*	*bězde*	*bězden*	
Baraba	*pis/bis/biz*	*pisniŋ/pistiŋ*	*pisni/pisti*	*piskä*	*pistä*	*pistän*	
Karač.-Balk.	*biz*	*bizni*	*bizni*	*bizge*	*bizde*	*bizden*	
Kumyk	*biz*	*bizin*	*bizin*	*bizge*	*bizde*	*bizden*	

2 pl.	nom.	gen.	ac.	dat.-dir.	loc.	ablative	instr.
Cumanic	*siz*	*siziŋ*	*sizni*	*sizge*	*sizde*	*sizden*	
Baškir	*hĕð*	*hĕððĕŋ*	*hĕððĕ*	*hĕðge*	*hĕððe*	*hĕððen*	
Nogai	*siz*	*siziŋ*	*sizdi*	*sizge*	*sizde*	*sizden*	
Kazakh	*siz(der)/ sender*[1]	*siz(der)diŋ/ senderdiŋ*	*siz(der)di/ senderdi*	*siz(der)ge/ senderge*	*siz(der)de/ senderde*	*siz(der)den/ senderden*	*sizben/ sizdermen/ sendermen*
Karakalpak	*siz*	*siziŋ*	*sizdi*	*sizge*	*sizde*	*sizden*	
Crim. Tatar	*siz*	*sizniŋ*	*sizni*	*sizge*	*sizde*	*sizden*	
Karaim[G]	*siz*	*siz(n)in*	*sizni*	*sizge*	*sizde*	*sizden*	*siznimbe*
Volga Tatar	*sĕz*	*sĕzněŋ*	*sĕzně*	*sĕzge*	*sĕzde*	*sĕzden*	
Baraba	*sis/silar*	*sisniŋ/sistiŋ*	*sisni/sisti*	*siskä*	*sistä*	*sistän*	
Karač.-Balk.	*siz*	*sizni*	*sizni*	*sizge*	*sizde*	*sizden*	
Kumyk	*siz*	*sizin*	*sizin*	*sizge*	*sizde*	*sizden*	

1) *siz* 2sg. formally; *sizder* 2pl. formally; *sender* 2pl. informally.

3 sg.	nom.	gen.	ac.	dat.-dir.	loc.	ablative	instr.
Cumanic	*ol*	*aniŋ/ɣ*	*ani*	*aŋa(r)/aar*	*anda*	*andan*	
Baškir	*ul*	*uně̆ŋ*	*uně̆*	*uɣa*	*unda*	*unan*	
Nogai	*ol*	*onïŋ*	*onï*	*oɣa*	*onda*	*onnan*	
Kazakh	*ol*	*onïŋ*	*onï*	*oɣan*	*onda*	*onan/odan*	*onïmen*
Karakalpak	*ol*	*onïŋ*	*onï*	*oɣan*	*onda*	*onnan*	
Crim. Tatar	*o*	*onï(ŋ)*	*onï*	*oŋa*	*onda*	*ondan*	
Karaim[G]	*ol*	*anïn*	*anï*	*anar*	*anda*	*andan*	*anïmba*
Volga Tatar	*ul*	*aně̆ŋ*	*anĕ*	*aŋa(r)/aŋar(ɣa)*	*anda/aŋarda*	*andan/aŋardan*	
Baraba	*ol/ul*	*anï*	*anï*	*aŋa*	*anda*	*andan/an(n)an*	
Karač.-Balk.	*ol*	*anï*	*anï*	*anga*	*anda*	*andan*	
Kumyk	*o*	*onu*	*onu*	*oɣar*	*onda*	*ondan*	

3 pl.	nom.	gen.	ac.	dat.-dir.	loc.	ablative	instr.
Cumanic	*onlar*	*anlarniŋ/ anlarnin*	*anlarni*	*anla(r)ɣa*	*anlarda*	*anlardan*	
Baškir	*ular*	*ularðĭ̆ŋ*	*ularðĭ̆*	*ularɣa*	*ularða*	*ularðan*	
Nogai	*olar*	*olardïŋ*	*olardï*	*olarɣa*	*olarda*	*olardan*	
Kazakh	*olar*	*olardïŋ*	*olardi*	*olarɣa*	*olarda*	*olardan*	*olarmen*
Karakalpak	*olar*	*olardïŋ*	*olardï*	*olarga*	*olarda*	*olardan*	
Crim. Tatar	*olar*	*olarnï(ŋ)*	*olarnï*	*olarɣa*	*olarda*	*olardan*	
Karaim[G]	*alar*	*alarnïn*	*alarnï*	*alarɣa*	*alarda*	*alardan*	*alarba*
Volga Tatar	*alar*	*alarně̆ŋ*	*alarně̆*	*alarɣa*	*alarda*	*alardan*	
Baraba	*alar*	*alarnïŋ/ alardïŋ*	*alarnï/ alardï*	*alarɣa*	*alarda*	*alrdan/ alarnan*	
Karač.-Balk.	*ala*	*alanï*	*alanï*	*alaɣa*	*alada*	*aladan*	
Kumyk	*olar*	*olanï*	*olanï*	*olaɣa*	*olarda*	*olardan*	

7.1.1.4. Personal pronouns in the Karluk languages

Lit.: Blagova 1997, 156–57; *Ead*. 2002, 447–48; Boeschoten 1998, 362; Erdal 2004, 192, 199; Hahn 1998, 391; Kirchner 1998, 348; Kononov 1980, 165; Oruzbaeva 1997, 295; Rešetov 1966, 347–48.

1 sg.	nom.	gen.	ac.	dat.	dir.	loc.	abl.	equ.
OTurkic	*bän/män*	*bäniŋ/méniŋ/miniŋ*	*bini/mini*	*baŋa/maŋa*	*baŋaru*	*mintä/min(i)dä*	*mintin/mindin*	
Karakh.	*men*	*meniŋ*	*meni*	*maɣan*		*mende*	*mennen*	
Uyghur	*män*	*meniŋ*	*meni*	*maŋa*		*män(iŋ)dä*	*män(iŋ)din*	
Kirgiz	*men*	*menin*	*meni*	*maɣa/maŋa*		*mende*	*menden/mennen*	
Čaghatai	*men*	*meniŋ/méniŋ*	*meni*	*mañga*		*mendä*	*mendin*	
Uzbek	*men*	*meniŋ*	*meni*	*menga*		*menda*	*mendan*	*menimča*

2 sg.	nom.	gen.	ac.	dat.	dir.	loc.	abl.	sim.	equ.
OTurkic	*sän*	*säniŋ*	*sini*	*saŋa/säŋä*	*saŋaru*	*sintä/sin(i)dä*	*sinidin*	*siničüläyü*	
Karakh.	*sen*	*seniŋ*	*seni*	*saɣan*		*sende*	*sennen*		
Uyghur	*sän*	*seniŋ*	*seni*	*saŋa*		*sän(iŋ)dä*	*sän(iŋ)din*		
Kirgiz	*sen*	*senin*	*seni*	*saɣa/saŋa*		*sende*	*senden/sennen*		
Čaghatai	*sen*	*seniŋ/säniŋ*	*seni*	*sañga*		*sendä*	*sendin*		
Uzbek	*sen*	*seniŋ*	*seni*	*senga*		*senda*	*sendan*		*seniŋča*

1 pl.	nom.	gen.	ac.	dat.	loc.	abl.	equ.	dir.	sim.
OTurkic	*biz/bizlär*	*biz(n)iŋ*	*bizni*	*biziŋä/bizkä*	*bizintä/biznitä/biznidä*	*biznidan*		*biziŋärü*	*bizinčüläyü*
Karakh.	*biz*								
Uyghur	*biz*	*biziŋ*	*bizni*	*bizge*	*bizde*	*bizdin*			
Kirgiz	*biz*	*bizdin*	*bizdi*	*bizge*	*bizde*	*bizden*			
Čaghatai	*biz/bizlär*	*biz(n)iŋ*	*biz(n)i*	*biz(g)ä*	*bizdä*	*bizdin*			
Uzbek	*biz / bizlär*[1]	*biziŋ*	*bizni*	*bizgȧ*	*bizdȧ*	*bizdȧn*	*biziŋčȧ*		

1) Exclusive / inclusive (Poppe 1965, 192).

2 pl.	nom.	gen.	ac.	dat.	loc.	equ.	abl.	dir.
OTurkic	*siz/sizlär*	*siz(n)iŋ/sizlärniŋ*	*siz(lär)ni*	*siziŋä/sizlärkä*	*sizintä/siznidä/sizlärdä*		*siznidin*	*siziŋäru*
Karakh.	*siz*							
Uyghur	*siz(ler)/siler*[1]	*sizniŋ/si(z)lerniŋ*	*sizni/si(z)lerni*	*sizge/si(z)lerge*	*sizde/si(z)lerde*		*sizdin/si(z)lerdin*	
Kirgiz	*siz(der)/siler*[2]	*sizd(er)din/silerdin*	*siz(der)di/silerdi*	*siz(der)ge/silerge*	*siz(der)de/silerde*		*siz(der)den/silerden*	
Čaghatai	*siz/sizlär*	*siz(n)iŋ*	*siz(n)i*	*siz(g)ä*	*sizdä*		*sizdin*	
Uzbek	*siz*	*siziŋ*	*sizni*	*sizgȧ*	*sizdȧ*	*siziŋčȧ*	*sizdȧn*	

1) *siz* = polite form to one addressee; *sizler* = plural; *siler* = polite form to several addressees (Kirchner 1998b, 348).
2) *siz* = polite form to one addressee; *sizder* = polite form to several addressees; *siler* = plural (Kirchner 1998b, 348).

3 sg.	nom.	gen.	ac.	dat.	loc.	abl.	inst.	equ.	dir.	sim.
OTurkic	*ol* "that" / *bo* "this"[1]	*anïŋ/ munuŋ monuŋ*	*anïb/ munï*	*aŋa(r) muŋa(r)*	*antab/ munta*	*antïn muntïn*	*anïn munun*	*an(ï)čab/ munča*	*aŋaru bärü*	*anïlayu munïlayu*
Karach.	*ol*	*onïŋ*	*onï*	*oγan*	*onda*	*onnan*				
Uyghur	*u*	*uniŋ*	*uni*	*uniŋa*	*uniŋda*	*uniŋdin*				
Kirgiz	*al/ol*	*anïn/ onun*	*anï/ onï*	*aγa/oγo*	*anda/ ondo*	*andan/ ondon*				
Čaghatai	*ol*	*anïŋ*	*anï*	*a͡nga*	*anda*	*andïn*				
Uzbek	*(b)u*	*(b)uniŋ*	*(b)uni*	*(b)uŋá*	*(b)undá*	*(b)undán*		*(b)unčá*		

1) Details see Räsänen 1955b, 27–31.

3 pl.	nom.	gen.	ac.	dat.	loc.	abl.	dir.
OTurkic	*(b)olar*	*(b)olarnïŋ*	*(b)olarnï*	*(b)olarka*	*(b)olarta*	*(b)olardïn*	*olargaru*
Karakh.	*olar*						
Uyghur	*ular*	*ularniŋ*	*ularni*	*ularγa*	*ularda*	*ulardin*	
Kirgiz	*alar*	*alardïn*	*alardï*	*alarga*	*alarda*	*alardan*	
Čaghatai	*alar*	*alarnïŋ*	*alarnï*	*alarγa/alarga*	*alarda*	*alardïn*	
Uzbek	*(b)ulár*	*(b)ularnïŋ*	*(b)ularnï*	*(b)ularga*	*(b)ularda*	*(b)ulardan*	

7.1.1.5. Personal pronouns in the South Siberian Turkic languages

Lit.: Castrén 1857, 21; Duľzon 1966, 450; Dyrenkova 1940, 93; *Ead*. 1941, 82; Grekul 1975, 146; Isxakov – Paľmbax 1961, 216–217; M 173–175; Schönig 1998, 409–410; TT 23.

1 sg.	nom.	gen.	ac.	dative	locative	ablative	instr.	directive
Khakas	*min*	*miniŋ*	*minï*	*maγā*	*minde*	*minneŋ*	*minneŋ*	*minzer*
Šor	*men*	*mēŋ/meniŋ*	*meni*	*maγa/mā*	*mende*	*meneŋ*	*mēŋme*	
Čulym	*men/män*	*mēŋ*	*meni*	*mā*	*mände*	*mändin*	*mäŋvälä*	
Saryg-Yughur	*men*	*mineŋ/ meniŋ*	*meni*	*maγa/ maŋa*	*mende*	*menindin*		
Fu-yü-Kirgiz	*min*	*miniŋ*	*mini*	*mĭ̄*	*mịndī*	*minīn*		*minsar(īh)*
Altai	*men*	*meniŋ*	*meni*	*mege/mē/mā*	*mende*	*meneŋ*		
Tofalar	*men*	*mīŋ/mim*	*meni*	*meŋē/mē*	*mėnde*	*mėndėn*		
Tuva	*men*	*mēŋ*	*meni*	*meŋē/mē*	*mende*	*menden*		*menče*

2 sg.	nom.	gen.	ac.	dative	locative	ablative	instr.	directive
Khakas	*sin*	*siniŋ*	*sinï*	*saγā*	*sinde*	*sinneŋ*	*sinneŋ*	*sinzer*
Šor	*sen*	*sēŋ/seniŋ*	*seni*	*saγa/sā*	*sende*	*seneŋ*	*sēŋme*	
Čulym	*sen/sän*	*sēŋ/sāŋ*	*seni*	*sā*	*sände*	*sändin*	*säŋvälä*	
Saryg-Yughur	*sen*	*seniŋ*	*seni*	*saγa/saŋa/seniŋgə*	*sende*	*senindin*		
Fu-yü-Kirgiz	*sin*	*siniŋ*	*sini*	*sĭ̄*	*sịndī*	*sinīn*		*sinsar(īh)*
Altai	*sen*	*seniŋ*	*seni*	*sege/sē/sā*	*sende*	*seneŋ*		
Tofalar	*sen*	*sīŋ/sim*	*seni*	*seŋē/sē*	*sėnde*	*sėndėn*		
Tuva	*sen*	*sēŋ*	*seni*	*seŋē/sē*	*sende*	*senden*		*senče*

1 pl.	nom.	gen.	ac.	dative	locative	ablative	instr.	directive
Khakas	*pïs*, *bis*[C]	*bisteŋ*[C]	*biste*[C]	*biskä*[C]	*bistä*[C]	*bistäŋ*[C]	*pissneŋ*	*pisser*
Šor	*pis*	*pistiŋ*	*pisti*	*piske*	*piste*	*pisteŋ*		
Čulym	*pis*	*pistiŋ*	*pisti*	*piskä*	*pistä*	*pistin*		
Saryg– M Yughur T	*mïs* *mïster*	*mïstïc* *mïsternïŋ*	*mïstï* *mïsternï*	*mizgə/mïzge* *mïsterge*	*mïsta* *mïsterte*	*mïstïn* *mïsterten*		
Fu-yü-Kirgiz	*bïs*							
Altai	*bis(ter)*	*bistiŋ*	*bisti*	*biske*	*biste*	*bisteŋ*	*bis-le*	
Tofalar	*biʔs/bis*[C]	*bisteŋ*[C]	*biste*[C]	*biskä*[C]	*bistä*[C]	*bistän*[C]		
Tuva	*bis*	*bistiŋ*	*bisti*	*biske*	*biste*	*bisten*		*bisče/bistive*

Note.: C = Castrén; M = Malov 1957, 23; T = Tenišev – Todaeva 1966, 173–75.

2 pl.	nom.	gen.	ac.	dative	locative	ablative	instr.	directive
Khakas	*sïrer* *silär*, *sirä*[C]	*silärneŋ/* *siräneŋ*[C]	*silärne/* *siräne*[C]	*silärgä/* *sirägä*[C]	*silärdä/* *sirädä*[C]	*silärdäŋ/* *sirädäŋ*[C]	*sirerneŋ*	*sirerzer*
Šor	*s(i)ler*	*s(i)lerdiŋ*	*s(i)lerdi*	*s(i)lerge*	*s(i)lerde*	*s(i)lerdeŋ*		
Čulym	*s(i)lär*	*slärniŋ*	*slärni*	*slärgä*	*slärdä*	*slärdin*	*slärniŋvälä*	
Saryg– M Yughur T	*s(e)ľer/* *siler*[1]	*sľerniŋ* *silerniŋ*	*sľernï* *silernï*	*s(e)ľerge* *silerge*	*sľerte* *silerte*	*sľertin* *silerten*		
Fu-yü-Kirgiz	*sirïr*							
Altai	*sler*	*slerdiŋ*	*slerdi*	*slerge*	*slerde*	*slerdeŋ*	*sler-le*	
Tofalar	*sïler*, *silär*[C]	*silär*[C]	*silärne*[C]	*silärgä*[C]	*silärdä*[C]	*silärdän*[C]		
Tuva	*siler*	*silerniŋ*	*silerni*	*silerge*	*silerde*	*silerden*		*silerže / silerdive*

1) T 23: **siz-ler*.

3 sg.	nom.	gen.	ac.	dative	locative	ablative	instr.	directive
Khakas	*ol*	*anïŋ*	*anï*	*aɣā*	*anda*	*annaŋ*	*annaŋ*	*anïŋzar*
Šor	*ol*	*äŋ*	*anï*	*aɣa/ā*	*anda*	*anaŋ*	*āŋma*	
Čulym	*ol*	*anïŋ*	*anï*	*aɣa*, *ärä*	*anda*	*ändïn*	*anïŋvŭla*	
Saryg- M Yughur T	*ol* *qol*	*anïŋ* *qonïŋ*	*anï* *gonï*	*aŋa/aɣa/oɣa* *goɣa*	*anda/onda* *gonda*	*andan/ondan* *gon(ïŋ)dan*	kom. *andaɣ*	
Fu-yü-Kirgiz	*ol*	*anïŋ*	*anï*	*oloɣo*	*anda*	*anan*		*olsar(ih)*
Altai	*ol*	*onïŋ*	*onï*	*oɣo/aɣa/ō*	*ondo/anda*	*onoŋ*		
Tofalar	*ol*	*onuŋ*	*onu*	*aŋa/ā*	*ïndï*	*unun/ïndan*		
Tuva	*ol*	*ōŋ*	*onu*	*aŋā*	*ïnda*	*ōn*		*olče / oldıva*

3. pl.	nom.	gen.	ak.	dativ	locative	ablativ	instr.	dir.
Khakas	*olar/oler*	*olarneŋ*	*olarne*	*olarga*	*olarda*	*olardaŋ*	*olarnaŋ*	*olarzar*
Šor	*(ï)lar/* *p(ï)lar*[1]	*(ï)lardïŋ*	*(ï)lardï*	*(ï)larga*	*(ï)larda*	*(ï)lardaŋ*		
Čulym	*olar*	*olarniŋ*	*olarnï*	*olarɣa*	*olarda*	*olardïn*	*olarniŋvŭla*	
Saryg-Yughur T	*qolar*	*golarniŋ*	*golarnï*	*golarɣa*	*golarta*	*golartan*		
Fu-yü-Kirgiz	*olor*							
Altai	*olor*	*olordïŋ*	*olordï*	*olorgo*	*olordo*	*olordoŋ*	*olor-lo/-la*	
Tofalar	*olar*	*olarneŋ*	*olarne*	*olarga*	*olarda*	*olardan*		
Tuva	*ïlar*	*olarniŋ*	*olarnï*	*olarga*	*olarda*	*olardan*		*olarže / olardïva*

1) *(ï)lar* ‘more distant deixis’ = *ol* + *-lar*; *p(ï)lar* = *po* + *-lar* ‘more closer deixis’

7.1.1.6. Personal pronouns in the North Siberian Turkic languages: Yakut
Lit.: Böhtlingk 1851, 270; Stachowski – Menz 1998, 422.

	part.[1]	ac.[B]	ac.	dat.	ablative	instr.	equative[2]	com.[3]	adverbial[4]
1 sg.	*min*	*mijigin*	*mīgin*	*mieχe*	*mīgitten*	*mīginen*	*mīginnēγer*	*mīginnīn*	*mīginni*
2 sg.	*en*	*äjigin*	*eÿigin*	*eÿieχe*	*eÿigitten*	*eÿiginen*	*eÿiginnēγer*	*eÿiginnīn*	*eÿiginni*
3 sg.	*kini*[5]	*kinini*	*kinini*	*kinieχe*	*kinitten*	*kininen*	*kinitēγer*	*kinilīn*	*kininni*
this	*bu*[6]	*manï*		*manïaχa*	*mantan*	*manan*	*mannaγar*	*mannīn*	*mannï*
that	*ol*[7]	*onu*		*onuoχa*	*onton*	*onon*	*onnoγor*	*onnūn*	*onnu*
1 pl.	*bihigi*[8]	*bisigini*	*bihigini*	*bihieχe*	*bihigitten*	*bihiginen*	*bihiginnēγer*	*bihiginnīn*	*bihiginni*
2 pl.	*ehigi*[8]	*ä/isigini*	*ehigini*	*ehieχe*	*ehigitten*	*ehiginen*	*ehiginnēγer*	*ehiginnīn*	*ehiginni*
3 pl.	*kiniler*		*kinileri*	*kiniler-ge*	*kiniler-ten*	*kiniler-nen*	*kiniler-deγer*	*kiniler-dīn*	*kiniler-inni*

Note: *In Yakut the genitive was eliminated, but the Turkic genitive ending continues in some adverbs, e.g. *bastïŋ* “from the beginning”, *tastïŋ* “from the outside” (R 34; other discussion see Š 34–35). B = Böhtlingk. 1) Also called *casus indefinitus* (Böhtlingk 1851, 260), originally locative. 2) Alternatively called *casus comparativus*; Böhtlingk explained the ending *-ta* from **-day* < **-daγ* (cf. **andaγ* “auf jene Weise”) + Mongolic instr. **-γar*, while in SG 89 the loc. **-tA* + dir. **-gArU* are recognized here. 3) Composed of the Turkic connective suffix **-lï* (cf. OTk. *inili ičili* “sowohl die jüngeren als auch die älteren Brüder”) + instr. **-ïn*. 4) Alternatively called modalis, originally an old converb: *kihili* < **kišiläyü* “sich wie ein Mensch betragend”, and further “auf menschliche Art”. 5) From Tk. **käntü* “alone” (Rä 26). 6) Pl. *balar*, loc. sg. *manna* “here”. 7) Pl. *olor*, loc. sg. *onno* “there” (Stachowski–Menz 1998, 422–423). 8) The suffix *-igi* represents the numeral “2”, cf. Yakut *ikki* (Rä 10). Alternatively, it may be analogical to the development forming the possessives in sg.: *miĭigi* < **meniŋ-ki & äĭigi* < **seniŋ-ki* (Menges 1968/1995, 121).

7.1.1.7 Reconstructed case system of personal pronouns in the Turkic protolanguage
The proto-Turkic reconstructions of the case endings follow Anna Dybo (2006a, 230–33)

case	1 sg.	2 sg.	1 pl.	2 pl.	3 sg.	3 sg.	3 pl.
nom.	**(e)bi*	**si*	**biŕ*	**siŕ*	**o(l)* „that“	**bo/bu* „this“	**(b)olar* „these/those“
gen.	**min-üŋ*	**sin-üŋ*	**biŕ-üŋ*	**siŕ-üŋ*	**an-uŋ*	**mun-uŋ*	**(b)olar-uŋ*
ac.	**min-i*	**sin-i*	**biŕ-i*	**siŕ-i*	**an-ï*	**mun-ï*	**(b)olar-ï*
dat.	**min-ka*	**sin-ka*	**biŕ-kä*	**siŕ-kä*	**an-ka*	**mun-ka*	**(b)olar-ka*
dir.	**min-garu*	**sin-garu*	**biŕ-gärü*	**biŕ-gärü*	**an-garu*	OTk. *bärü*	**(b)olar-garu*
loc.	**min-tä*	**sin-tä*	**biŕ-tä*	**siŕ-tä*	**an-ta*	**mun-ta*	**(b)olar-ta*
abl.	**min-tin*	**sin-tin*	**biŕ-tin*	**siŕ-tin*	**an-tïn*	**mun-tïn*	**(b)olar-tïn*
?instr.	**min-in*	**sin-in*	**biŕ-in*	**siŕ-in*	**an-ïn*	**mun-ïn*	**(b)olar-ïn*
?equ.	**min-čä*	**sin-čä*	**biŕ-čä*	**siŕ-čä*	**an-ča*	**mun-ča*	**(b)olar-ča*
?sim.	**min[ ]läyü*	**sin[ ]läyü*	**biŕ[ ]läyü*	**siŕ[ ]läyü*	**an(ï)-layu*	**mun(ï)-layu*	**(b)olar[ ]layu*

Note: There are also relics of the Turkic pronominal stem ***ïn-***: Old Turkic *ïna* ‘demonstrative interjection’, eq. *ïnča* “the following, in the following way” (~ Yakut *injä*, *inžä* “so”), abl. *ïntïn* “(the one) on the other side”, dir. *ïnaru* “forward; from ... on”, besides *ïngaru / ïŋaru* in *anta ïngaru* “from then on, thereafter” (Erdal 2004, 205–07), corresponding to Old Uyghur *naru*, Čaghatai *nari* “that side”; further e.g. Balkar *in-ol* “that there”, *in-anda* “there”; Yakut *innik* “such” < **in-lik* (Räsänen 1955b, 19), Turkmen *inë*, Uzbek dial. *inä* “here!, hey!” (Ščerbak 1977, 130), Khalaj *ïna*, Tofalar *ïndï*, Tuva *ïnda* “there” (*EDAL* 577), originally loc.sg. The primary root could be preserved in the possessive ***-i***, known from Čuvaš *-ə*, *-i*, and Yakut *-ä*, *-a*, obl. *-i*^{o}, *-y*^{o} (Räsänen 1955b, 18).

7.1.2. Personal pronouns of the Mongolic languages

Lit.: Bertagaev 1968, 42; Faehndrich 2007, 119; Janhunen 1990, 61–62; Jaxontova 1996, 66; Nugteren 2003, 272; Poppe 1955, 209–225; *Id*. 1970, 125–127; Rybatzki 2003, 71; Sárközi 2004, 26; Slater 2003a, 83–87; Todaeva 1968, 24; *Ead*. 1986, 53–54; Weiers 2003, 257; Wu Hugjiltu 2003, 336.

1 sg.	nom.	gen.	ac.	dat.-loc.		abl.	instr.	com.	soc.
WrMo.	*bi*	*minu*	*namaji*		*nadur*	*namača / nadača*	*namabar*	*namaluɣa*	
MMo.	*bi*	*minu*^{SH,H,Mu} *mini*^{Mu}	*namaji*^{SH} *namai̯ / minaji*^{Mu}	*nama*^{H} < **nama-a*	*nadur / nada*^{SH} *nadu*^{Mu}	*nadāsa / nidāsa*^{Mu}	*nama'ar*^{SH} *nadawar*^{Mu}	*nadalā*^{Mu} / *namalu'a*	
Ordos	*bi*	*mini*	*namā̄(g̥)*	*namā̄du*	*nada*	*nadās*	*namā̄gār / nadār*	*namā̄lā / nadalā*	*nadatā̄*
Khalkha	*bi*	*mini*	*namᵛē(g)*		*nadɒ(dɒ)*	*nadās*	*nadār*		*nadɒtᵛē*
EBuryat	*b́i*	*meńī /meńi*	*namā̄(ji)*	*namda*		*namhā*	*namār*	*namlār*	*namtā̄*
Khamn.	*bi / bī*	*minī*	*namaj*	*namadu*		*namāxa*	*namār*		*namatei*
Kalmyk	*bi*	*minı̣ / minɛ̄*	*namā̄(g)*	*nandɒ*		*nanās*	*nanār*	*nanlā̄*	*nantā̄*
WrOirat	*bi*	*mini*	*namai*	*nada*		*nadaēce*	*nadabēr*	*nadaluɣā*	*nadatai*
Šira Yughur	*bi / bu*	*mini / muni*	*namīn / damīn*	*nanda / danda*		*nandasa / dandasa*	*nandaɣār*	*nandala / dandala*	
Monghl. Narin.	*bu*	*muni*	*ndā*		^{dat}*ndā* ^{loc}*munire*	*ndādza*	*ndāra*	*ndāla*	
Manghr.	*bi*	*muni*	*namei / nangda*	*namei-du nangda(-du)*					
Bonan	*be*	*mene*		*nada*		*nasa*			
Santa	*bi*	*mini/miji*	*mini/miji // nami*	*namade / made*		*namase / mase*	*biɣala*	*namale / male*	
Dagur	*b́i / b́ī*	*ḿińī*	*namᵛī*	*namda*	*nada*	*namās*	*namār*		*namtī*
Moghol	*bi*	*mini/ men(nai)*	*namɛi̯/ nami/ meni*	*nanda/-u/ minandu*		*namasah/ minasah*	*namangar*	*bilah*	
*CoMo.	**bi*	**min-ü/ *min-i*	**mina-ji/ *nama-ji*	**nama- -da/-du(r)*	**na-du(r)*	**nama- ača*	**nama- βar*	**nama- luɣa*	**nama-tai̯*

Abbreviations of Middle Mongol sources: H Hua-yi yi-yü; Mu Muqaddimat al-Adab; SH Secret history of the Mongols.

2 sg.	nom.	gen.	ac.	dat.-loc.	abl.	instr.	com.	soc.
WrMo.	*či*	*činu*	*čimaji*	*čimadur*	*čima-ača*	*čimabar*	*čimaluɣa*	
MMo.	*či*	*činu, čini*^{Mu}	*čimaji*	*čimadu(r) / čimada*	*čimadača*	*čima'ar*	*čimalā*	
Ordos	*tši*	*tšini*	*tšamā̄(g)*	*tšamadu*	*tšamās*	*tšamār*	*tšamalā*	*tšamatā̄*
Khalkha	*tši*	*tšinī*	*tšamɒē(g)*	*tšamɒdɒ*	*tšamās*	*tšamār*		*tšamtᵛē*
EBuryat	*ši*	*šeńī / šeńi*	*šamā̄(ji)*	*šamda*	*šamhā*	*šamār*	*šamlār*	*šamtē*
Khamn.	*ci / cī*	*cinī*	*cimai*	*cimadu*	*cimāxa*	*cimār*		*cimatei*
Kalmyk	*tši*	*tšinı̣*	*tšamā̄g*	*tšamdɒ*	*tšamās*	*tšamār*	*tšamlā̄*	*tšamtā̄*
WrOirat	*či*	*čini*	*čimai*	*čimadu*	*čimaēce*	*čimabēr*	*čimaluɣā*	*čimatai*
Šira Yughur	*či*	*čini*	*čimīn*	*čimadi*	*čimasa*	*čimaɣār*	*čimala*	
Monghl. Narin.	*t'śi*	*t'śini*	*t'śimī*	(dat. = ac.) ^{loc}*t'śinire*	*t'śimīdza*	*t'śimīra*	*t'śimīla*	
Manghr.	*t'i*	*t'ini / t'imei*	*t'imei(-du)*					

2 sg.	nom.	gen.	ac.	dat.-loc.	abl.	instr.	com.	soc.
Bonan	*če*	*čene*		*čoda*	*čosa*			
Santa	*čï*	*čïni / čïji*	*čïni / čïji*	*čïmade*	*čïmase*	*čïɣala*	*čïmale*	
Dagur	*ś̀i*	*ś̀ini*	*šamᵒī*	*šamda*	*šamās*	*šamār*		*šamtᵒī*
Moghol	*či*	*čini / čenai*	*činɛ̧/čeni/ čemai/če'i*	*čenandu*	*čināsa / čin(a)sah*	*činār / čenangar*	*tšinalē*	
*CoMo.	**či*	**čin-ü / *čin-i*	**čima-ji*	**čima-du(r)*	**čima-ača*	**čima-βar*	**čima-luɣa*	**čima-taị̂*

1 pl. ex.	nom.	gen.	ac.	dat.		abl.	instr.	com.	soc.
WrMo.	*ba*	*manu*	*mani*	*mana*	*mandur*	*manača*	*manijar*	*manluɣa*	
MMo.	*ba*	*manu*	*mani*	*mana*					
Ordos		*mani*	*manī(g)*		*mandu*	*manās*	*manār*	*manlā*	*mantā̃*
Khalkha		*manᵒē*	*manīg*		*mandɒ*	*manās*	*manār*		*mantᵒē*
EBuryat		*manā̃*	*mańi/mańïji*		*manda*	*manhā*	*manār*		*mantā̃*
Khamn.		*manai*	*manī*		*mandu*	*manāxa*	*manār*		*mantai/-ei*
Kalmyk		*manā̃/mań*	*manīg*		*mandɒ*	*manās*	*manār*	*manlā̃*	*mantā̃*
WrOirat		*mani*	*mani*		*mandu*	*manēce*	*manyēr*	*manluɣā*	*mantai*
Šira Yughur	see next table								
Monghl. Narin.		*ndā(sgi)ni*	*ndāsgini*		*dat.ndāsdu loc.ndānire*	*ndādza*	*ndāsgira*	*ndāsgila*	
Manghr.									
Bonan	*man'ge*	*mane*			*manda*	*mansa*			
Santa	*matan*	*ma(tan)ni*	*ma(tan)n-i*		*matande*	*matanse*	*matanɣala*	*matanle*	
Dagur	*bā*	*mā́ńī*	*mā́ńī*		*mānda*	*manās*	*manār*		*mantᵒī*
Moghol	*-ų/mån*	*mōni/måni*			*mōndu*	*mōnāsa*			
*CoMo.	**ba*	**man-u*	**man-i*	**man-a*	**man-dur*	**man-ača*	**man-iβar*	**man-luɣa*	**man-taị̂*

1. pl. in.	nom.	gen.	ac.	dative		abl.	instr.	com.	soc.
WrMo.	*bida*	*bidanu*	*bidani*	*bidana*	*bidandur*	*bidanača*	*bidanijar*	*bidanluɣa*	
MMo.	*bida*	*bidanu*	*bidani*		*bidandur*	*bidanāsa*		*bidanlā*	
Ordos	*bida*	*bidani*							
Khalkha	*bʲaddɒ / biddə*	*biddɒnī / bidnī*	*bidnīg*		*biddendə*	*bidnēs*	*bidnēr*		*bidəntē*
EBuryat	*beď'e*								
Khamn.	*bide*	*bidenei*	**bidenī*		*bidendü*	*bidenēxe*	*bidenēr*		*bidentei*
Kalmyk	*bidᵊ*	*bidn̥nɛ̄*	*bidnīg*		*bidn̥də*	*bidnēs*	*bidnēr*	*bidn̥lɛ̄*	*bidn̥tɛ̄*
WrOirat	*bida(n)*	*bidani*	*bidani*		*bidandu*	*bidanēce*	*bidanyēr*	*bidanluɣā*	*bidantai*
Šira Yughur	*exbuda*[1] *inbudas*[2]	*exbudani inbudasi*	*exbudani inbudasi*		*exbudandi inbudasti*	*exbudansa inbudassa*	*exbudanār inbudasār*	*exbudanla inbudasla*	
Monghl. Narin.	*buda(-sgi)*	*budasgi-ni*	*budasgi-ni*		*budasgi-du*	*budasgi-dza*	*budasgi-ra*	*budasgi-la*	
Manghr.	*dasi*[3]								
Bonan	*bede*	*bedane*			*bedanda*	*bedansa*			
Santa	*bižien*	*bižienni*	*bižienni*		*bižiende*	*bižiense*	*bižienɣala*	*bižienle*	
Dagur	*b̀âda*	*b̀âdańī*							
Moghol	*bidah / bidat*	*bidani/ bida'i / bidatai*	*bidani/ bida'i / bidati*		*bidandu / bidat(t)u*	*bidanasah*	*bida(ta)r*		cf. gen. *bidatai*
*CoMo.	**bida*	**bidan-u*	**bidan-i*	**bidan-a*	**bidan-dur*	**bidan-ača*	**bidan-iβar*	**bidan-luɣa*	**bidan-taị̂*

1) Originally the inclusive form. 2) Formed from the inclusive stem *buda*ᵒ by the plural suffix *-s* (Nugteren 2003, 272). 3) **bida* + pl. **-s*.

2 pl.	nom.	gen.	ac.	dat.(-loc.)	abl.	instr.	com.	soc.
WrMo.	*ta*	*tanu*	*tani*	*tandur*	*tanača*	*tanijar*	*tanluɣa*	*tantai*
MMo.	*ta*	*tanu*	*tani*	*tandur*	*tanaca*		*tanlu'a*	
Ordos	*ta*	*tani*	*tanī(g)*	*tandu*	*tanās*	*tanār*	*tanlā*	*tantā̆*
Khalkha	*tā*	*tanᵉē*	*tanᵊīg*	*tandɒ*	*tanās*	*tanār*		*tantᵉē*
EBuryat	*tā*	*tanā̆*	*tańi/tańīji*	*tanda*	*tanhā*	*tanār*		*tantā̆*
Khamn.	*ta / tā*	*tanai*	*tanī*	*tandu*	*tanāxa*	*tanār*		*tantai/-ei*
Kalmyk	*ta*	*tanā̆/tań*	*tanīg*	*tandɒ*	*tanās*	*tanār*	*tanlā̆*	*tantā̆*
WrOirat	*ta*	*tani*	*tani*	*tandu*	*tanēce*	*tanyēr*	*tanluɣā*	*tantai*
Šira Yughur	*ta*	*tani*	*tani*	*tandi*	*tansa*	*tanār / tayār*	*tanla / tala*	
Monghl. Narin.	*ta(sgi)*	*ta(sgi)ni*	*tasgini*	*tasdu* / [loc] *tanire tagida*	*tasdza / tasgidza*	*tasgira*	*tasgila*	
Manghr.	*tasi*[1]							
Bonan	*ta*	*tane*		*tanda*	*tansa*			
Santa	*ta*	*nani / taji*	*tani / taji*	*tande*	*tanse*	*tayala*	*tanle*	
Dagur	*tā*	*tāńī*	*tāńī*	*tānda*	*tanās*	*tanār*		*tantᵉī*
Moghol	*tå(d)*	*tåni/ tådai, tåtai*	*tåni / tåti*	*tåndu / tåtu*	*tånasah*	*tånar*		
*CoMo.	**ta*	**tan-u*	**tan-i*	**tan-dur*	**tan-ača*	**tan-iβar*	**tan-luɣa*	**tan-taį*

1) **ta* + pl. **-s* (Slater 2003, 84).

3 sg.	nom.	gen.	ac.	dat.(-loc.)	abl.	instr.	com.	soc.
WrMo.	*-i*[1]	*inu*	*imaji*	*imadur*	*imadača*	*imayari*	*imaluɣa*	*imatai*
MMo.		*inu*	*imaji*[TH]	*imadur & imada*		*ima'ari*	*imalu'a*	
Dagur	*īn*	*īnī*	*jamī*	*jamad / jamda*	*jamās*	*jamār*		*jamtī*
Moghol	*i / ih / eh*	*ini / eni / ennai*	*enni*[2]	*enidu*[2]				
*CoMo.	**i*	**in-u*	**ima-ji*	**ima-du(r)*	**imad-ača*	**ima-βar*	**ima-luɣa*	**ima-taį*

1) The possessive suffix. 2) The expected **-m–* was probably replaced by *-n–* under the influence of the demonstrative *enah / inah* "this". In most living Mongolic languages the primary demonstratives play the role of the personal pronoun of the 3rd person. They usually correspond to WrMo. *ene* "this", pl. *ede*, and *tere* "that", pl. *tede* (Poppe 1955, 226). Moghol *mun/munah* "this", pl. *munat* "these", *mutat* "those" (Weiers 2003, 258) and Old Moghol (Zirni ms.) *mun* "he himself", *muna* "this" (*ZM* 117) represent the same pronominal form as MMo. *mün*, pl. *müt* "this one" (Rybatzki 2003, 72). A rather strange origin may be ascribed to the 3sg. pronoun in Mongghul & Manghuer: *gan* "he, she" < CoMo. **irgen* "people" (Georg 2003, 298; Slater 2003b, 314).

3 pl.	nom.	gen.	ac.	dat.(-loc.)	abl.	instr.	com.	soc.
WrMo.		anu						
MMo.		*anu*	*ani*	*andur*, loc. *ana*				
Dagur	*ān*	*ānī*	*ānī*	*ānda*	*ānās*	*ānār*		*āntī*
*CoMo.	**a*	**an-u*	**an-i*	**an-du(r)*	**an-ača*	**an-iβar*	?**an-luɣa*	**an-taį*

7.1.3. Personal pronouns of the Tungusic languages

Lit.: Avrorin, *JN* V, 137; Avrorin – Lebedeva, *JN* V, 200; Benzing 1955a, 107–109; Bulatova 2003, 179–183; Haenisch 1961, 42–43; Menges 1968, 151–152, 192–93; Möllendorf 1892, 6; Petrova 1967, 64–65; Sunik 1968a, 160; *Id*. 1968b, 220; Tsumagari 2009, 6.

1. sg.	Man.	Nanai	Olča	Orok	Oroči	Udihe	Solon	Negidal	Ewenki	Ewen	*
nom.	*bi*[1]	*mī*	*bi*	*bi/bī*	*bī*	*bi*	*bī*	*bi*	*bi/bī*	*bi*	**bi*
gen.	*mini*[2]						*minī*		*miŋi*		**min-ŋī*
ac.	*mimbe*	*mimbiwə*	*mimbə*	*mimbe*	*minəwə*	*minəwə*	*minewe*	*minəwə*$_o$	*minəwə*	*minu*	**-bä-bä*
dat.	*minde*	*mindu*	*mindu*	^{loc}*mindu*	*mindu*	*mindu*	*mindü*	*mindū*	*mindū*	*mindū*	**-düä*
abl.	*minci*		*miŋki*	*mikki*	*mindu̇i*	*mindigi*	*mindüxi*	*min-dukkə*$_e$*j*	*minduk*	*minduk*	**-dü.ki*
loc.		*mindulə*	*mindulə*	*mindulə*	*mindu̇la*	*mindulə*	*mindülā̄*	*mindulạ̄*	*mindula*	*mindulə̄*	**-dü.lā̄*
prol.						*mindili*	*mindülī*	*mindulī*	*mindulī*	*mindulī*	**-dü.lī*
dir./ loc.									*minikla*	*minъklā*	**-ki.lā̄*
dir./ prol.									*minikli*	*minъkli*	**-ki.lī*
dir./ all.		*minči*	*minti*	*mittəi*	*minti*	*mintigi*	*mintixī*	*minətkī / mintïkī*	*mintïkī*	*mintъkī*	**-ti.kī*
instr.		*minďi*	*minʒi*	*minʒi*	*mińǯi*	*minʒi*	*minji*	*minǯi*	*minǯi*	*minъč*	**-ǯi*
el.		*minďiaďi*	*minʒiʒi*		*mińǯiǯi*		*mingīji*		*minŋit*	*mingič*	**-gī.ʒ́i*
com.				*mindu*					*minnun*	*minnun*	?

1) Cf. Jurchen **bi*. 2) Cf. Jurchen **mini* (Kane 1989, 270, #676).

2. sg.	Man.	Nanai	Olča	Orok	Oroči	Udihe	Solon	Negidal	Ewenki	Ewen	*
nom.	*si*[1]	*sī*	*si*	*si/sī*	*sī*	*si*	*sī*	*si*	*si/sī*	*hi*	**si*
gen.	*sini*						*sinī*		*siŋi*		**sin-ŋī*
ac.	*simbe*	*simbiwə*	*simbə*	*simbe*	*sinəwə*	*sinəwə*	*sinewe*	*sinəwə*$_o$	*sinəwə*	*hinu*	**-bä-bä*
dat.	*sinde*	*sindu*	*sindu*	^{loc}*sindu*	*sindu*	*sindu*	*sindü*	*sindū*	*sindū*	*hindū*	**-düä*
abl.	*sinci*		*siŋki*	*sikki*	*sindu̇i*	*sindigi*	*sindüxi*	*sindukkə*$_e$*j*	*sinduk*	*hinduk*	**-dü.ki*
loc.		*sindulə*	*sindulə*	*sindulə*	*sindu̇la*	*sindulə*	*sindülā̄*	*sindulạ̄*	*sindula*	*hindulə̄*	**-dü.lā̄*
prol.						*sindili*	*sindülī*	*sindulī*	*sindulī*	*hindulī*	**-dü.lī*
dir./loc.									*sinikla*	*hinъklā*	**-ki.lā̄*
dir./prol.									*sinikli*	*hinъkli*	**-ki.lī*
dir./all.		*sinči*	*sinti*	*sittəi*	*sinti*	*mintigi*	*sintixī*	*sinətkī / sintïkī*	*sintïkī*	*hintъkī*	**-ti.kī*
instr.		*sinďi*	*sinʒi*	*sinʒi*	*sińǯi*	*sinʒi*	*sinji*	*sinǯi*	*sinǯi*	*hinъč*	**-ǯi*
elative		*sinďiaďi*	*sinʒiʒi*		*sińǯiǯi*		*singīji*		*sinŋit*	*hingič*	**-gī.ʒ́i*
com.				*sindu*					*sinnun*	*hinnun*	?

1) Cf. Jurchen **ši* (Kane 1989, 270, #675).

1. pl. inc.	Man.	Nanai	Olča	Orok	Oroči	Udihe	Solon	Negidal	Ewenki	Ewen	*
nom.	*muse*				*biti*	*minti*	*miti*	*bittə/bit*	*mit*	*mut*	**mün.ti*[1]
gen.	*musei*										**-ŋī*
ac.	*musebe*							*-və/-pə*	*mitpə/-wə*	*mutū*	**-ba*
dat.	*musede*							*-dū/-tū*	*mittū*	*muttū*	**-dua*
abl.	*museci*							*-dukkə j̊ / -tuk*	*mittuk*	*muttuk*	**-du.kï*
loc.								*-lą̄/-tulą̄*			**-du.lā*
prol.								*-lą̄/-tulī*	*mittulī*	*muttulī*	**-du.lī*
dir./loc.										*mutъklə*	**-kï.lā*
dir./prol.									*mitïkli*	*mutъkli*	**-kï.lī*
dir./all.								*-tkī/-tikī*	*mittïkï*	*muttъkī*	**-tï.kī*
instr.								*-ǯi/-i-t*	*mitït*	*mutъč*	**-ǯï*
elative									*mitkit*	*mitkič*	**-gī.ʒ́i*
com.									*mitnun*	*mutnun*	?

1) Formed from the stem **mün-*, representing the oblique base of the 1pl. inclusive pronoun.

1. pl. excl.	Man.	Nanai	Olča	Orok	Oroči	Udihe	Solon	Negidal	Ewenki	Ewen	*
nom.	*be*	*buə*	*bū*	*bu*	*bū*	*bu*	*bū̃*	*bu*	*bu / bū*	*bu*	**büä*
gen.	*meni*						*münī*		*muŋi*		**mün-ŋī*
ac.	*mimbe*	*bum-biwə*	*mum-bə*	*mum-bəpu*	*mun-əwə*	*mun-əwə*	*mün-ewe*	*mun-əwə*$_o$	*mun-əwə*	*mun-u*	**-bä-bä*
dat.	*mende*	*bundu*	*mundu*	[loc]*mundu*	*mundu*	*mundu*	*mündü*	*mundū*	*mundū*	*mundū*	**-düä*
abl.	*men-ci*		*muŋ-ki*	*muk-ki*	*mun-dùi*	*mun-dugi*	*mün-düxi*	*mun--dukkə j̊*	*mun-duk*	*mun-duk*	**-dü.ki*
loc.		*bun-dulə*	*mun-dulə*	*mun-dulə*	*mun-dùla*	*mun-dulə*	*mün-dülą̄*	*mun-dulą̄*	*mun-dula*	*mun-dulə*	**-dü.lą̄*
prol.						*mun-dili*	*mün-dülī*	*mun-dulī*	*mun-dulī*	*mun-dulī*	**-dü.lī*
dir./ loc.									*mun-iklə*	*mun-ъklə*	**-ki.lā*
dir./ prol.									*mun-ikli*	*mun-ъkli*	**-ki.lī*
dir./ all.		*bun-či*	*mun-ti*	*mut-təi*	*mun-ti*	*mun-tugi*	*mün-tixī*	*munətkī / muntïkī*	*mun-tïkī*	*mun-tъkī*	**-ti.kī*
instr.		*bunď'i*	*munʒi*	*munʒu*	*muńǯi*	*munʒi*	*münji*	*munǯi*	*munǯi*	*munъč*	**-ǯi*
el.		*bun-ď'iaď'i*	*mun-ʒiʒi*		*muń-ǯiǯi*		*mün-gīji*		*mun ŋit*	*mun-gič*	**-gī.ʒ́i*
com.				*mun-du*					*mun-nun*	*mun-nun*	?

2. pl.	Man.	Nanai	Olča	Orok	Oroči	Udihe	Solon	Negidal	Ewenki	Ewen	*
nom.	*suwe*	*suə*	*sū*	*su*	*sū*	*su*	*sū̃*	*su*	*su / sū*	*hu / hū*	**süä*
gen.	*suweni*						*sünī*		*suŋi*		**sün-ŋī*
ac.	*suwembe*	*sumbiwə*	*sumbə*	*sumbəpu*	*sunəwə*	*sunəwə*	*sünewe*	*sunəwə*$_o$	*sunəwə*	*hunu*	**-bä-bä*
dat.	*suwende*	*sundu*	*sundu*	[loc]*sundu*	*sundu*	*sundu*	*sündü*	*sundū*	*sundū*	*hundū*	**-düä*
abl.	*suwenci*		*suŋki*	*sukki*	*sundùi*	*sundugi*	*sündüxi*	*sun--dukkə j̊*	*sunduk*	*hunduk*	**-dü.ki*
loc.		*sundulə*	*sundulə*	*sundulə*	*sundùla*	*sundulə*	*sündülą̄*	*sundulą̄*	*sundula*	*hundulə*	**-dü.lą̄*
prol.						*sundili*	*sündülī*	*sundulī*	*sundulī*	*hundulī*	**-dü.lī*
dir./ loc.									*suniklə*	*hunъklə*	**-ki.lā*

2. pl.	Man.	Nanai	Olča	Orok	Oroči	Udihe	Solon	Negidal	Ewenki	Ewen	*
dir./ prol.									*sunikli*	*hunъkli*	**-ki.lī*
dir./ all.		*sunči*	*sunti*	*suttəi*	*sunti*	*suntugi*	*süntixī*	*sunətkī / suntīkī*	*suntīkī*	*huntъkī*	**-ti.kī*
instr.		*sunďi*	*sunʒi*	*sunʒu*	*suńǯi*	*sunʒi*	*sünji*	*sunǯi*	*sunǯi*	*hunъč*	**-ǯi*
el.		*sunďiaďi*	*sunʒiʒi*		*suńǯiǯi*		*süngīji*		*sunŋit*	*hungič*	**-gī.ǵi*
com.				*sundu*					*sunnun*	*hunnun*	?

3. sg.	Man.	Nanai	Olča	Orok	Oroči	Udihe	Solon	Negidal	Ewenki[2]	Ewen	*
nom.	*i*	*ńoańi*	*nānï*	*nōni*	*nu̇ŋ-ańi*	*nu̇a-ni*	*nugan*	*noŋan*	*nuŋan*	*noŋ-ъn*	**i* **-ńi*
gen.	*ini*								*nuŋaŋi*		**-ŋī*
ac.	*imbe*	*ńoam-bańi*	*nām-banï*	*nōm-boni*	*-amańi*	*-man*		*-mān*	*nuŋan-ma*	*-man*	**-ba*
dat.	*inde*	*ńoan-doańi*	*nān-du̇nï*	*nōn-duni*	*-andu̇ńi*	*-ndïnï*		*-dūn*	*nuŋan-du*	*-ъndūn*	**-dua*
abl.	*inci*		*nāŋ-kïnï*	*nōk-kini*		*-ndïgïnï*		*-dukkin*	*nuŋan-duk*	*-ъndukun*	**-du.kï*
loc.		*ńoan-dolańi*	*nān-du̇lanï*	*nōn-dulani*		*-ndïlanï*		*-dulān*		*-ъndulan*	**-du.lā*
prol.						*-ndïlïnï*		*-dulīn*	*nuŋanduli*	*-ъndulin*	**-du.lī*
dir./ loc.										*-ъklan*	**-kï.lā*
dir./ prol.										*-ъklin*	**-kï.lī*
dir./ all.		*ńoań-čiańi*	*nān-tïnï*	*nōt-toini*		*-ntïgïnï*		*-tixīn*		*-ъntъkin*	**-tï.kī*
instr.		*ńoań-ďiańi*	*nān-ʒïnï*	*nōn-ʒiči*		*-nʒïnï*		*-ǯin*	*nuŋan-ǯi*	*-ъnďin*	**-ǯï*
el.		*ńoań-ďiďiańi*	*nān-ʒïʒïnï*							*-ŋidin*	**-gī.ǵi*
com.				*nōn-duni*					*nuŋan-nun*	*-ъndin*	?

1) Cf. Jurchen **ini* (Kane 1989, 297, #813). 2) Without the final **-ńi* according to Castrén (1856).

3. pl.	Man.	Nanai	Olča	Orok	Oroči	Udihe	Solon	Negidal	Ewenki[1]	Ewen	*
nom.	*ce*	*ńoańči*	*nātï*	*nōči*	*nu̇ŋanti*	*nu̇atï*	*-sal*	*noŋatil*	*nuŋar*	*noŋъr-tъn*	**ti* **-ti(n)*
gen.	*ceni*								*nuŋarŋi*		**-ŋī*
ac.	*cembe*	*ńoam-bači*	*nām-batï*	*nōm-boči*	*-wa*	*-wə*		*noŋal-ba-tin*	*nuŋar-wa*	*-bu̇-tъn*	**-ba*
dat.	*cende*	*ńoan-doači*	*nān-du̇tï*	*nōn-duči*	*-du*	*-du̇*		*-dū-tin*	*nuŋar-du*	*-du̇nъn*	**-dua*
abl.	*cenci*		*nāŋ-kïtï*	*nōk-kiči*		*-dïgï*		*-dukki-tin*	*nuŋar-duk*	*-du̇qu̇-tъn*	**-du.kï*
loc.		*ńoan-dolači*	*nān-du̇latï*	*nōn-dulači*		*-la*		*-dulā-tin*		*-du̇la-tъn*	**-du.lā*
prol.						*-lï*		*-dulī-tin*	*nuŋar-li*	*-du̇li-tъn*	**-du.lī*
dir./ loc.										*-ъqla-tъn*	**-kï.lā*
dir./ prol.										*-ъqli-tъn*	**-kï.lī*
dir./ all.		*ńoań-čiači*	*nān-tïtï*	*nōt-toini*		*-tïgï*		*-tixī-tin*		*-tъqi-tъn*	**-tï.kī*
instr.		*ńoańďiači*	*nānʒïtï*	*nōnʒiči*	*-ǯi*	*-ʒï*		*-ǯi-tin*	*nuŋarǯi*	*-di-tъn*	**-ǯï*

3. pl.	Man.	Nanai	Olča	Orok	Oroči	Udihe	Solon	Negidal	Ewenki[1]	Ewen	*
el.		*-d'id'iači*	*nānʒïʒïtï*							*-gidi-tъn*	**-gī.ʒ́i*
com.				*nōn-duči*					*nuŋar-nun*	*-ńún-tъn*	?

1) Without the final **-ti(n)* according to Castrén (1856).

7.1.4. Personal pronouns in Korean

The present Korean personal pronouns, if the polite forms and Chinese borrowings are eliminated (e.g. *ce* "I" – see Martin 1996, 45), represent a seemingly simple system, e.g. the pronoun of the 2nd person plural is formed from the singular by the plural suffix *-huy*, in the same way as the polite 1 pl. *ce-huy* "we" from the 1 sg. *ce* "I" (LR 174–75). But already at the Middle Korean level an irregular accentuation in individual cases of the 1 & 2 sg. appears.

Lit.: LR 71, 185–186; Ma 133, 701, 710–712.

	1 sg.	2 sg.	1 pl.	2 pl.
New Korean	나 *na*	너 *nŏ*	우리 *uri*	너희 *nŏhŭi*
Middle Korean				
abs.	*nà*[146]	*nè*[147]	*wúlí*	*nèhùy*
subj.	*náy*	*něy*		
gen.	*này*	*nèy*		
ac.	*năl*	*nèl*		

Poems called *hyangga* from the 8th–10th cent. CE still preserve Old Korean forms of the personal pronouns, which are hidden under the Chinese characters. The sytem of their transcription *idu* used for Korean from the Era of Three Kingdoms till the Era Joseon indicates the reading sign for the 1 sg.:

1 sg. (& pl.?) 矣[148] **uy* & 矣 徒[149] **uynoy*, where *-noy* is the pseudo-plural suffix as in MKor. *emanim-nay* "mothers" (LR 71; cf. Ma 708). Lee (1977, 85) derived **yj* from **ɔ̈j*, Whitman (2012, 33) from **ɨj*, which could have been preceded by **we̊j* (Menges 1984,

146 Cf. VA 225 about the probable OKor. reading **na*. Ramstedt (*PKE* 118) derived this pronoun from **mna*.

147 LR 186; Ma 710, 712. Vovin (2011, 255) quotes a different distribution of accent: subj. *nèy*, gen. *něy*, ac. *nèl*. Ramstedt (1982 121) proposed the development **nne* < **snä*. But in inlaut the cluster *-sn-* is still preserved in the Middle Korean period, cf. the form *is-no-n*, derived from the verb *isi–* „to be". On the other hand, the medial assimilation *-t* + *n-* > *-nn-* is attested e.g. in the form *ton-ní-* "to run around" < **tot-ní-*. All this means that the development from **tnä* seems more probable (cf. Martin 1996, 27, 76). It is supported by the Cin-Han (pre-Silla) gloss 徒 from the 3rd cent. CE, pronounced as **dɔ* in the 6th cent. (Pulleyblank 1991, 311), and **dhā* in the 3rd. cent. CE (Starostin, *ChEDb*; *GSR* 0062 e-f), plus pRy. **Ndaa* „you" (Vovin 2007a, 616; 2013b, 228).

148 In modern Beijing Chinese the character 矣 is read as *yǐ* and serves to designate one postverbal perfective particle. For the Early Middle Chinese Pulleyblank (1991, 367) reconstructed the pronunciation **ɨ'/*i'*, Starostin (*ChEDb*) **ɦɨ́*, with preceding forms in Postclassic Chinese **hɨ́* < Han & Classic Chinese **hə́* < Preclassic Chinese **həʔ* (Starostin, *ChEDb*).

149 In modern Beijing Chinese the character 徒 *tú* means „to go on foot; foot soldier; conscript; colleague, disciple; only, vainly". It was preceded by Late Middle Chinese **tɦuə̌* < Early Middle Chinese **dɔ* (Pulleyblank 1991, 311) = **do* < Postclassic Chinese **dhō* < Han & Old Chinese **dhō* (Starostin, *ChEDb*). Its use was motivated by its partial homonymy with Kor. *nae* „person". This form was finally grammaticalized into the function of the plural ending, cf. *pumo* „parent" : *pumone* „parents" (Ramstedt 1949, 158).

249), perhaps compatible with the pronoun of the 1 sg. **bi*, reconstructed in the Turkic, Mongolic and Tungusic languages. The labial in the initial position is missing in other Korean forms, e.g. in MKor. *ì* "to be" : Tg. **bi-*; Mo. **büji-*; OJp. *wi-* (*EDAL* 35, 342). An alternative solution may be found in the reconstruction **ebi*, leading also to Čuvaš *epĕ*.

1 pl. 吾[150] 里[151]. The first character is used in a semantic function, as it designates the 1st person pronoun in Chinese. Its use also in the role of a phonogram is attractive, but the change of pronunciation **ŋuə̆ > u*' should have been realized between the 10th and 14th cent., i.e. after the record of the poems. The second sign represents a phonetic complement. Its Middle Chinese reading confirms the conventional Middle Korean transcription with the liquid *-l-*, which was preceded by *-r-* in older stages of development of Chinese.

2 sg. 汝[152]. The Chinese character belonging to the 2nd person. Its Middle Chinese reading in the period between 600 and 1000 CE changes from **ńő* (Starostin, *ChEDb*) or **ɲiə̆*' (Pulleyblank 1991, 268) into **riə̆'/*ryə̆'*. The earlier form with the initial palatal nasal could serve also as the phonogram, now also in agreement with chronology of composition of the poems. Vovin (2011, 255) thinks about the Old Korean reconstruction **ne* "thou".

In the role of pronouns of the 3rd person various demonstratives are used, differing according to proximity to a speaker: near – *i/yo* "this" < MKor. *í*; middle – *ku/ko* "that" < MKor. *kù*; distant – *ce/co* "that" < MKor. *tyé* (Ma 134, 548, 649, 439).

7.1.5. Personal pronouns in Old Japanese and Ryukyu dialects

(without the number distinction)

Lit.: V 216–279; Vovin 2011.

1 ps.	*wa*	*ware*[1]	**wanu*[2]	Shuri	**a*[3]	*are*	*na*[4]	*marö*
pos.	*wa-Nka*	*ware*		[nom]*waa-ga*	*a-Nka*			*marö-Nka*
ac.	*wa-wo*	*ware-wo*		*waN*	*a-wo*	*are-wo*		
dat.	*wa-ni*	*ware-ni*	*wanu-ni*	*waN-ni*		*are-ni*		
com.				*waN-tu*				
abl.		*ware-yori*						
dir.	*wa-Nkari*			*waN-niNkai*				

1) **warai*, where *-ra-* can be the plural suffix and *-i* the ending of the active case (V 220). 2) Cf. the forms in Ryukyu dialects: Kawahira *banu*, Hateruma *baa*, Kunigami, Sesoko *waa/waN* (V 229). 3) Cf. ORy. *a* "I", pos. *a-ga*, Sesoko '*a*, '*agan*, '*agami* "we, us", Yonaguni '*anu* "I" : *ba-* "we" (V 241). Vovin (V 243) thinks

150 In modern Beijing Chinese the character 吾 *wú* designates the 1 sg. pronoun „I, me". During the Yuan Dynasty (1270–1360) its pronunciation was *u*'. These forms were preceded by Late Middle Chinese (*c*. 1000 CE) **ŋuə̆* < Early Middle Chinese (*c*. 600 CE) < **ŋɔ* (Pulleyblank 1991, 325) = **ŋo* < Postclassic Chinese **ŋhō* < Han & Old Chinese **ŋhā* (Starostin, *ChEDb*).

151 In modern Beijing Chinese the character 里 *lǐ* means „village, hamlet, community; measure of distance". It is preceded by Middle Chinese **li*'/**li*' (Pulleyblank 1991, 188) = Middle & Postclassic Chinese **lí* < Han & Classic Chinese **rə́* < Preclassic Chinese **rəʔ* (Starostin, *ChEDb*).

152 In modern Beijing Chinese the character 汝 is read as *rǔ* and belongs to the 2sg. pronoun „thou". It is preceded by Late Middle Chinese **riə̆'/*ryə̆'* < Early Middle Chinese **ɲiə̆*' (Pulleyblank 1991, 268) = Middle Chinese **ńő* (Starostin, *ChEDb*) < Postclassic Chinese **ńhó* < Han & Classic Old Chinese **ńhá* < Preclassic Old Chinese **nhaʔ* (Starostin, *ChEDb*).

about any connection with the Ainu preffix **a/*a-N-*, serving as the marker of the 1st person of the transitive verb and as the suffix *-an* by the intransitive verb. Vovin (2007, 616; 2013, 228) also adds the pre-Silla gloss 阿, read as **ʔā* in the 3rd. cent. CE (Starostin, *ChEDb*). 4) Vovin (2011, 254) judges this form is an adaptation of Kor. *na* "I".

2 ps.	*na*[1]	*nare*	*namuti*[2]	*masi*	*imasi*	*myimasi*	*ore*[3]	**si*
pos.	*na(ne)-Nka*							**si-Nka*[4]
gen.						*myimasi-nö*		
ac.	*na-wo*	*nare-wo*		*masi-wo*				
dat.	*na-ni*					*myimasi-ni*		
com.	*na-tö*							

1) But pRy **Ndaa*: Yonaguni *Ndaa*, Hateruma, Shitoi *daa* (Vovin 2007a, 616; 2013b, 228). 2) OJp. *namuti* is recorded only in glosses or transcriptions, but in Middle Japanese it is frequently used as *namuti & namudi* (V 247, note 82; Sy 51). It is related to pRyJp. **namu*, reconstructed on the basis of Koniya *naṃ*, Sesoko *naa*, *naN*, Namizato, Shuri and ORy. *naa* (V 247–55 and Vovin 2011, 254–55 judges that the Ryukyu forms are borrowed from Middle Japanese and all Japanese forms of the 2nd person in *n-* are of Korean origin). 3) Cf. also pRyJp. **Ura* (Vovin 2011, 255; V 289: **'ura*). 4) Reconstructed on the basis of MJp. *si-ga mi* "thy body" > "thou", cf. the parallel formation *wa-ga mi* "my body" > "I" (V 267). The pJp. starting-point **siNka* may also be interpreted as **sin-Nka.*

3 ps.	close: *kö*[1]	middle: *sö*	**si*	distant: *ka*[2]	*woti/wotö/ wote*[3]	pRyJp. **anu/*ari*[4]	pRyJp. **unu/*uri*[5]
pos.		*sö-(ne-)Nka*	*si-Nka*				
gen.		*sö-ne*					
ac.	*kö-woNpa*	*sö-wo*					
abl.	*kö-yu/-ywo*						

1) Vovin (V 279) calls into question the comparison of Martin (1966, 244) with Middle Korean *kù* "that" for the semantic difference and prefers as a cognate Čuvaš *ku* "this", Volga-Bulgar *kö* id. Further cf. Salar *ku*, Saryg-Yughur *gu/go* id. (*EDAL* I, 709). 2) Cf. Ry. *kari/kanu* "that", attested in such dialects as Agarinakasone, Yonaha, Yonaguni and Tonoshiro (V 293–94). 3) Vovin (V 295) assumes the demonstrative **wo-* < **bo-* for the distant deixis, while *ti* should be related to OJp. *ti* "way" according to him. 4) ORy. *'anu* / *'ari* "that" (V 293). Cf. OJp. *ano* "that" (Sy 52). 5) Rjúkjú: Šuri *'unu* / *'uri* "that" (V 289 thinks about a connection with the Ryukyu pronoun of the 2nd person **'ura*).

7.1.6. Altaic protolanguage system of personal pronouns

	Turkic	Mongolic	Tungusic	Middle Korean ⁺Old Korean	proto-Japanese	Altaic
1 sg.	**(e)bi*	**bi*	**bi*	*⁺yj < *ij*	**ba*	**(e)bi*
obl.	**min°*	**min(a)° /* **nama° <* **mana° < *min°*	**min°*	*?nà < *mn°*	**ban°*	**min°*
2 sg.	**si*		**si*			**si*
obl.	**sin°*		**sin°*		**si[n]*	**sin°*
2 sg.		**či*				**t'i*
obl.		**čin° / *čima°*		*?nè < *tn°?*, cf. pre-Silla **dhā*	pRy. **Ndaa*	**t'in°*
1 pl. in. / du.	**biŕ*	**bida*[1]	**büä*	*wúlí*	**barai*	**bi[j]ä(-ŕ)*

	Turkic	Mongolic	Tungusic	Middle Korean +Old Korean	proto-Japanese	Altaic
obl.			**mün*°			**mün*°
1 pl. ex.		**ba*			**ba*	**ba*
obl.		**man*°			**ban*°	**man*°
2 pl.	**siŕ*		**süä*			**si[j]ä(-ŕ)*
obl.			**sün*°			**sün*°
2 pl.		**ta*				**t'a*
obl.		**tan*°				**t'an*°
3 sg.	**-i* „his"	**i*	**i*	*í* „this"	*i* „this"	**i*[2]
obl.	**in*°	**in*°	**in*°			**in*°
3 pl.?	**o*?	**a*?				**a*?
obl.	**an*°	**an*°			**anu* „that"	**an*°

1) Traditionally explained as **bi* "I" + pl. suffix **-d* (Illič-Svityč 1976, 56); alternatively **bi & *ta* "I & you" (R 71, §37). 2) Cf. *EDAL* I, 577.

It is possible to conclude that the personal pronouns in the daughter branches of the Altaic (macro-)family preserve two specific common features: the opposition of the root vowels **i* vs. **a* in sg. vs. pl. respectively and the opposition of a direct case (nominative) with a base for the oblique cases characterized by a nasal extension. Only this extended pronominal stem forms the basis for the case endings proper. An internal analysis of these and external comparisons demonstrate that they represent practically the same case markers as in the nominal declension. When projecting this system into the Altaic protolanguage, it remains an open question whether the different forms of the direct (nominative) and oblique cases in the 1st person sg., namely **(e)bi*[153] *: *min*° in our reconstruction, reflect the primary suppletion or whether they may be derived from a common denominator. Traditionally *m-* in the 1st person has been explained through nasal assimilation under the influence of the following *-n*, but comparably legitimate is the idea of a secondary denasalization **mV > *bV* in the monosyllabic morpheme with a final vowel (cf. Illič-Svityč 1976, 65). Preliminarily we conclude that this suppletion was functional already on the Proto-Altaic level and only a deeper comparison with the reconstructed protolanguages of Northern Eurasia can confirm the origin of the whole paradigm in one root, both from a genetic perspective (the Nostratic hypothesis of Illič-Svityč 55–56, 65; Dolgopolsky 1984) or from an areal perspective (e.g. Doerfer, Vovin). From this opposition one can also derive the seemingly incompatible Old Korean pair **yj* vs. **na*. As for the possibility of interpreting Old Japanese *na* as an early Korean loan (V 245–46; Vovin 2011, 253) and the base of the Mongolic oblique cases **na-ma*° via metathesis from **mana*° and further from **mina*°, the final minimal paradigm

153 Traditionally reconstructed as **bi*. The reconstruction **(e)bi* with the facultative **e-* reconstructed on the basis of Čuvaš *epĕ* explains the loss of the expected *-p–* in OKor. **yj*, because one of regular continuants of the intervocalic Altaic **-b-* was probably proto-Korean **-j-* (*EDAL* 36), cf. MKor. *kái* "bay, estuary" || Tungusic **xebe-* > Olča *xewe(n)* "lake", Nanai *xewē* "lake, bay" etc. || OJp. *kapa* "river" (*EDAL* 771).

**(e)bi* vs. **min*^{o} is relatively homogenous. The difference between the vowel *a* in the Japanese pronoun of the 1st person and the vowel **i* in other branches is probably explainable from the extended form **ban*^{o}. For this form the rule transforming the Proto-Altaic sequence **CiCa* into Proto-Japanese **CaCa* is applicable (*EDAL* 106). The form **ba* could be levelled with the originally oblique form **ban*^{o} or it represents an adaptation of the originally plural form **ba* (Old Japanese pronouns are more or less common for both singular and plural). Perhaps similar is the situation in the Old Japanese 2nd person sg. *na & namuti*, which are again probable early Korean loans (V 247–55). Old Korean **ne* / Middle Korean *nè* 'thou' may represent a reduction of a hypothetical primary protoform ***tnV*, supported by the pre-Silla gloss **dhā* and proto-Ryukyu **Ndaa* "you". The original suppletive pair could be reconstructed as **si* : **tin*^{o}. The 1st person plural pronoun probably differentiated between both inclusive and exclusive forms. The inclusive pronoun was formed by the suffix **-ŕ* which originally determined the dual (cf. *EDAL* 205). In the Mongolic branch it was replaced by the plural suffix **-d*, which also formed other pronouns such as Middle Mongolic pl. *mud* 'they' from sg. *mun* (Poppe 1955, 178–80). The final *-a* can be ascribed to the influence of the Mongolic 2nd person plural pronoun **ta* 'you'. The exclusive pronoun of the 1st person pl. **ba* differs from the 1st person sg. pronoun **(e)bi* in the root vowel. The vocalic opposition **i* in the singular versus **a* in the plural is probably universal, as it also appears in the 2nd and 3rd person plural pronouns. The existence of suppletion in the 2nd person plural is uncertain, but perhaps the opposition **si[j]ä(-ŕ)* : **t'an*^{o} can be conjectured. Various demonstratives serve as the 3rd person pronouns in individual branches.

Summary of the minimal oppositions between nominative and oblique in Proto-Altaic personal pronouns

person	1st		2nd		3rd	
number/case	nom.	obl.	nom.	obl.	nom.	obl.
sg.	**(e)bi*	**min*^{o}	**si*	**t'in*^{o}	**i*	**in*^{o}
pl.	in. **bi[j]ä(-ŕ)*	**mün*^{o}	**si[j]ä(-ŕ)*			
	ex. **ba*	**man*^{o}		**t'an*^{o}	**a/*o*	**an*^{o}

7.1.7. Survey of partial microsystems of the Indo-European personal pronouns

It is instructive to compare the internal diversity within the language family, whose genetic integrity is taken as safely proven, with the situation in the Altaic (macro-)family. The genetic unity of languages classified as Indo-European has usually been accepted. Let us mention the internal differences in their systems of personal pronouns, if they are independently projected into the protolanguage level:

	1st sg.						
	nom.	acc.	dat.	gen.	abl.	loc.	instr.
*IA	*H_1eĝHom*	*mēm / mē*	*meĝ^{h}i̯o(m) / moi̯*	*méme*	*med*	*mei̯*	
*Iranian	*H_1eĝH(-om)*	*mēm / mē*	*meb^{h}i̯o / moi̯*	*mene*	*med*		
*Armenian	*H_1eĝH*	*H_1m(e)ĝe*	*H_1meĝ^{h}ei̯*	*H_1me(n)*	*H_1med^{h}en*	*H_1m(e)ĝ^{h}i*	*H_1meb^{h}i*
*Greek	*H_1eĝoH*	*H_1me(ĝe)*	*H_1moi̯*	*H_1meso*	gen.*H_1med^{h}en*		
*Albanian	*H_1ēĝ(o)H*	*mēm / me*	*moi̯*	*so mei̯os*		abl.*moi̯-*	
*Venetic	*H_1eĝo(H)*	*meĝo*					
*Italic	*H_1eĝoH*	OU*mē(-om)* LF*mē & med*	*meg^{h}ei̯*	*mei̯s*	*med*		
*Celtic	*H_1eĝH*	*me*	*moi̯*	*meu̯e & mene*	*med*		
*Germanic	*H_1ēĝ(H)*	*meĝe*	*meso*	*mei̯nom/-eH_2*			
*Baltic	*H_1eĝH*	*mēm*	*mn̥ei̯*	*mene*			*moi̯*
*Slavic	*H_1ēĝom*	*mem / mē*	*mn̥oi̯ / mei̯*	*mene*		*mn̥oi̯*	*mn̥oi̯-eH$_2$m*
*Tocharian	*(m)eĝoH*	*meĝe*		*menei̯s & -mene*			
*Anatolian	*H_1eĝH*	*H_1m[n]uĝe*		*H_1m[n]el^o*	*H_1m[n]éd^o*		

	2nd sg.						
	nom.	acc.	dat.	gen.	abl.	loc.	instr.
*IA	*tu̯om*	*tu̯ēm / tu̯ē*	*tub^{h}i̯o(m) / toi̯*	*teu̯e*	*tu̯ed*	*tu̯ei̯*	*tu̯eH$_1$*
*Iranian	*tū(-om)*	*tu̯ēm / tu̯ē*	*teb^{h}i̯o / toi̯*	*teu̯e*	*tu̯ed*		*tu̯eH$_1$*
*Armenian	*tū*	*tu̯eĝe*	*tu̯eĝ^{h}ei̯*	*tu̯eso*	*tu̯ed^{h}en*	*tu̯eĝ^{h}i*	*tu̯eb^{h}i*
*Greek	*tŭ(ne)*	*tu̯e(ĝe)*	*tu̯oi̯*	*tu̯eso*	gen.*tu̯ed^{h}en*		
*Albanian	*tū*	*tu̯ēm / te*	*?tVb^{ho}/ toi̯*	*so tu̯os*		abl.*t(u̯)oi̯-*	
*Italic	*tū(-om)*	*tē(-om) / ted*	*teb^{h}ei̯*	*tei̯s*	*ted*		
*Celtic	*tū*	*tĕ*	*toi̯*	*teu̯e*			
*Germanic	*tū*	*teĝe*	*teso*	*tei̯nom/-eH_2*			
*Baltic	*tŭ*	*tēm*	*teb^{h}ei̯*	*teu̯e*			
*Slavic	*tū*	*tem / tē*	*teb^{h}ei̯ / tei̯*	*teb^{h}e*		*teb^{h}ei̯*	*t[u]b^{h}oi̯-eH$_2$m*
*Tocharian	*tu̯om*			obl.*teu̯e* vs. gen.*tune*			
*Anatolian	*tī*	*tuĝe*		*tu̯él^o*	*tu̯éd^o*		

	1st pl.						
	nom.	acc.	dat.	gen.	abl.	loc.	instr.
*IA	*u̯ei̯om*	*n̥sme+oms / nos*	*n̥smei̯ / nos n̥smeb^{h}i̯om*	*n̥sme+okom*	*n̥smed*	*n̥smei̯ n̥sme+osu*	*n̥sme+ob^{h}is*
*Iranian	*u̯ei̯om*	*n̥sme / nōs*	*n̥smeb^{h}i̯o / nos*	*n̥sme+okom / nos*	*n̥smed*		*n̥smeH$_1$*
*Armenian	*me(ie)s*	*(n̥s)meĝe*	*(n̥s)meĝ^{h}ei̯*	*(n̥s)merom*	*(n̥s)med^{h}eni̯os*	*(n̥s)meĝ^{h}i*	*(n̥s)meb^{h}is*
*Greek	*n̥sme(e)s*	*n̥sme*	*n̥smi*	*n̥sme(s)ōm*			
*Albanian	*nos*	*nōs*	= gen.	*nōsōm*	*nos-si*		
*Italic	*nōs*	*nōs*	*nōb^{h}ei̯+s*	*nostrei̯*	*nōb^{h}ei̯+s*		
*Celtic	*snēs*	*snŏs*		*n̥som n̥serōm*			
*Germanic	*u̯ei̯s*	*n̥se*	*n̥seso*	*n̥serom/-eH_2*			
*Baltic	*mĕs*	*mŏms < *nŏms*	*nōmus*	*nōsōm*			*mūmś < *nōmś*

	1st pl.						
	nom.	acc.	dat.	gen.	abl.	loc.	instr.
*Slavic	*mūs*	*nōms*	*nōmus*	*nōsom*		*nōs-su*	*nōmīs*
*Tocharian	*u̯os*	*/-n̥smo-*		*u̯osoi̯(s)*		*u̯os-ne/o*	
*Anatolian	*u̯ei̯(e)s*	*n̥s°* / *-nos*	*n̥sós*	*n̥sel°*	*n̥séd°*		

	2nd pl.						
	nom.	acc.	dat.	gen.	abl.	loc.	instr.
*IA	*i̯ūi̯om*	*usme+oms* (*o*-stem) / *u̯os*	*usmei̯* / *u̯os* *usmebʰi̯om*	*usme+okom* *usmei̯* / *u̯os*	*usmed*	*usmei̯* *usme+osu*	*usme+obʰis*
*Iranian	*i̯ūs(-om)*	*/ u̯ōs*	*usmebʰi̯o* / *u̯os*	*usme+okom* / *u̯os*	*usmed*		*usmeH*$_1$
*Armenian	*i̯ūs*	*u̯eǧe*	*u̯eǧʰei̯*	*u̯erom*	*u̯edʰeni̯os*	*u̯eǧʰi*	*u̯ebʰis*
*Greek	*usme(e)s*	*usme*	*usmi*	*usme(s)ōm*			
*Albanian	*u̯es*	*u̯ōs* / *u̯os*	*u̯osōm* / *u̯os*	*u̯osōm*	*u̯os-si*		
*Italic	*u̯ōs/u̯ēs*	*u̯ōs/u̯ēs*	*u̯ōbʰei̯+s*	*u̯estrei̯*	*u̯ōbʰei̯+s*		
*Celtic	*su̯ēs*	*su̯ĕ̄(s)*	*su̯ēs*	*su̯eserōm*			
*Germanic	*i̯ūs*	*isu̯e(s)*	*isu̯eso*	*isu̯erom/-eH*$_2$			
*Baltic	*i̯ūs*	*u̯ṓms*	*i̯ūmṓns* < **u̯ōmṓms*	*i̯ūsōn* < **u̯ōsōm*			*jūmī́s* < **u̯ōmī́s*
*Slavic	*u̯ō(m)s*	*u̯ōms*	*u̯ōmus*	*u̯ōsom*		*u̯ōsu*	*u̯ōmīs*
*Tocharian	*i̯os*	*/-usmo-*		*i̯osoi̯(s)*		*u̯os-ne/o*	
*Anatolian	*usmes* or *s(u)u̯es*	*(u)smós* or *s(u)u̯ós*		*(u)smensom*	*(u)sméd°*		

(see Bičanová, & Blažek 2014, 45–47)

7.2. Probably inherited Altaic demonstrative pronouns

The demonstratives in many Altaic languages frequently serve as the pronouns of the 3rd person, where they are documented in detail.

Turkic	Mongolic	Tungusic	Middle Korean	proto-Japanese	Altaic
**o(l)*	**ondu* „other“	**u–*	Kor. *ol* “just that”[4]	pRyJp. **unu* / **uri*	**o*[6]
obl. **an°*	pl. **an°*			MJp. *ano* pRyJp. **anu* / **ari*	**an°*[7]
**bo/*bu*				**bo-* > *woti*	**bo*
obl. **mun°*	**mün/*mun*[3]				**mun°*
**-si* “his”[1]				**sö* / **si*	**si*
**kö* “this”[2]	**kü*: WrMo. *tere kü* „exactly that“		*kù* „that“	**kö* „this“	**kü*
**ti-(kü)* „that“	**tere* “that” **tede* „those“	**tari* „that“	*tyé* „that“	MJp. *to-ni-kaku-ni* „that way“	**t'a* / **t'e*[8]

1) Cf. *EDAL* 1320–21. 2) Cf. *EDAL* 709; V 279. 3) Cf. *EDAL* 912. 4) Cf. Kor. *onal* “today” < **ol-nal* (*SKE* 176–77). 6) Cf. *EDAL* 1040. 7) Cf. *EDAL* 487. 8) Cf. *EDAL* 1389.

7.3. Altaic interrogative pronouns

The following examples may illustrate the Altaic systems of interrogative pronouns and some adverbs:

7.3.1. Turkic interrogatives pronouns and adverbs

Old Turkic

	who	what	where	which
nominative	*käm / kim*	*nä*		*kañu / kayu*
genitive	*kimiŋ / kimniŋ*	*näŋ*		*kayunuŋ*
accusative	*kimni*			*kayunï*
dative	*kämkä / kimkä*	*näkä*	*kaŋu*	*kayuka*
locative	*kimtädä*	*nädä*	*kanta*	*kañuda / kayuda*
ablative			*kantan*	*kayudïn*
equative		*näčä*	*kanča*	
directive				*kanugaru*
plural		*nägü*		

Erdal 2004, 211

Yakut

	part.	ac.	dat.	ablative	instr.	loc.	equative	com.	adverbial
who	*kim*, pl. *kimnēχ*	*kimi*	*kimieχe*	*kimten*	*kiminen*		*kimneγer*	*kimnīn*	*kimni*
what	*tuoχ*, pl. *tuoχtar*	*tuoγu tugu*	*tuoχχa toγo*[1]	*tuoχtan*	*tuoγunan tugunan*		*tuoχtaγar*	*tuoχtūn*	*tuoχtu*
*where	**xan-*		*xanïaxa*	*xantan*		*xanna*[2] where			

Notes: 1) Today only in the meaning “why”. 2) Cf. *xannïk* “which”, *xačča* “how much” (~ Old Turkic equ. *kanča* “where”), *xaččaγa* “when”. The locative analogically formed from various demonstratives bears adverbial functions: *manna* “here” : *bu* “this here”; *onno* “there” : *ōl* “that”; *sumanna* “eben hier” : *subu* “eben hier”; *itinnä* “hier(her)” : *iti* “dieser da”.

Böhtlingk 1851, 270–71.

Čuvaš

	who	what	which
nominative	*kam*	*mən*	*χâžə, χâš*
genitive	*kamân*	*mənən*	*χâžinən χâžijən*
dative-accusative	*kama*	*mənɛ*	*χâšnɛ*
locative	*kamra*	*məndɛ*	*χâžinžɛ*
ablative		*mənDɛn / mənrɛn*	
commitative-instrumental		*mənBɛ*	*χâžinBɛ*
equative		*miźɛ*, Kurm. *mənžɛ*	

	who	what	which
adverbial		*mənlɛ*	
plural	*kamzɛm*		*χâšsɛm*

Räsänen 1955b, 40–44

Räsänen (1955b, 40–46) summarized the Turkic interrogative stems as follows:

**kem* "who"

**kańu* "which" < **kan-ju*?

**kan-* "where"

**ne & *neme* "what" (Ramstedt 1916, 67; 1957b, 76 explained it from **je* via assimilation in gen. **jeŋ* ~ **jeniŋ* > **neŋ* ~ **neniŋ*, attested e.g. in Taranči *näniŋ*;

Čuvaš **min* "what" (Räsänen 1955b, 41 connected it with the Turkic interrogative particle *-mi/ -mu/ -ma*; in *EDAL* 1034 it is derived via metathesis from **neme*).

Čuvaš *śta* "where" < **jada* ~ **jedä* (Ramstedt 1916, 67; Id. 1957b, 76), but Egorov (1964, 44), mentioning the variants *ăśta/xăśta/kăśta*, derived them from **xajśte* <**xaj śĕrte*, where *śĕr* = "earth".

Yakut *tösö* "how much" < **čečä* < **ǯečä* < **ječä*, cf. Karagass *češe & čehe* "how much" < **ječä* (Ramstedt 1916, 67).

Yakut *tuox* "what" – Ramstedt (1916, 67) derived it from **jā̄-oq*, cf. Teleut *jök* "why" < **jä-ök*; Räsänen (1955b, 43) analyzed it as **to* "what" & *ox* "than, just", where the first component had to be related to Middle Turkic (Ibn Muhannā) *tävük* "irgend einer".

Tuvin *čū̄*, *čüve* "what", Tofalar *čū̄*, *čüme* id. < Mongolic **yägü(-me)*, cf. Khori-Buryat, Ordos *jū*, Dagur *jō̄* "what" < **yegü* (Ramstedt 1916, 67; Kotwicz 1936, 36; Poppe 1955, 230).

7.3.2. Mongolic interrogative pronouns and adverbs

Written Mongol

	who	what
nominative	*ken*, pl. *ked*	*yaγun*, MMo. pl. *ya'ud*
genitive	*ken-ü*	*yaγun-u*
accusative	*ken-i*	*yaγun-i*
dative-locative	*ken-dür*	*yaγun-dur*
ablative	*ken-eče*	*yaγun-ača*
commitative	*ken-lüge*	*yaγun-luγa*
instrumental	*ken-iyer*	*yaγun-iyar*
sociative	*ken-tei*	*yaγun-tai*

Sárközi 2004, 30

Poppe (1955, 229–30) summarized the Mongolic interrogativa as follows:

**ken* "who", pl. **ked*; **ke* "what" (MMo. *ya'u ke*), **kegüme* "something" < **kegün be*; **ker* "how"; MMo. *keli* "when" (cf. *teli* "that thing"); WrMo. *keǯiye* "when" < **kedige*; *kedüi* "how much" (sg.) vs. *kedün* "how many" (pl.), cf. *tedüi* "that much".

WrMo. *qaγa & *qamiγa* "where", MMo. *qa'a & qana* "where".

**yaγun* "what"; **yan* "what kind"; **yama* "something" < **yan be*; **yambar* "what sort of, what kind" < **yan ber*.

WrMo. *ali* "which", MMo. *ali(n)* "which, anyone", Kalmyk *äl*^{l} "which (of many), where" (cf. Rybatzki 2003, 72; Ramstedt 1935, 22).

7.3.3. Tungusic interrogative pronouns and adverbs

Manchu

	who	what	which
nominative	*we* < **ŋüi*	*ai* < **xai*	*ya* < **yā*
genitive	*wei*	*aini*	
accusative	*webe*	*aibe*^{Hae} / *aimbe*^{Möl}	*yabe*
locative	*wede*	*aide*	*yade*
elative	*weci*	*aici*^{Hae} / *ainci*^{Möl}	*yaci*

Haenisch 1961, 43; Möllendorff 1892, 6

Negidal

	who	who / what	
nominative	*nī ~ ńī ~ ŋī*	*ēxun ~ ēkun*, pl. *ēxul*	*ē*, pl. *ēl*
accusative det.	*nī-v*$_o$	*ēxun-ma*	*ē-va*
accusative indet.		*ēxun-a*	*ē-ya*
dative	*nī-dū*	*ēxun-dū*	*ē-dū*
directive	*ni-tkī*	*ēxun-tixī*	*ē-tkī*
locative	*nī-lą̄*	*ēxun-dulā*	*ē-lā*
prolative	*nī-lī*	*ēxun-dulī*	*ē-lī*
ablative	*nī-dukkə*$_o$*y*	*ēxun-dukkoy*	*ē-dukkoy*
instrumental	*nī-ǯi*	*ēxun-ǯi*	*ē-ǯi*

Cincius 1982, 34

Even

	yak „who / what"		*ŋi* „who"		
	sg.	pl.	sg.	pl. 1	pl. 2
nominative	*yak*	*yal*	*ŋi*	*ŋie*	*ŋil*
accusative	*yav*	*yalbu*	*ŋiv*	*ŋiev*	*ŋilbu*
dative	*yadu*	*yaldu*	*ŋidu*	*ŋiedu*	*ŋildu*
directive	*yatki*	*yaltaki*	*ŋitki*	*ŋietki*	*ŋilteki*

	yak „who / what“		*ŋi* „who“		
	sg.	pl.	sg.	pl. 1	pl. 2
locative	*yala*	*ildula*	*ŋile*	*ŋielə*	*ŋilduⱡə*
prolative	*yali*	*illduli*	*ŋili*	*ŋieli*	*ŋilduli*
dir.-loc.	*yakla*	*yalakla*	*ŋikle*	*ŋieklə*	*ŋiləklə*
dir.-prol.	*yakli*	*yalakli*	*ŋikli*	*ŋikli*	*ŋiləkli*
ablative	*yaduk*	*yalduk*	*ŋiduk*	*ŋieduk*	*ŋilduk*
elative	*yagič*	*yalgič*	*ŋigič*	*ŋiegič*	*ŋilgič*
instrumental	*yač*	*yaldi*	*ŋič*	*ŋieč*	*ŋildi*
commitative	*yańün*	*yaliyün*	*ŋińün*	*ŋieńün*	*ŋiliyün*

Cincius 1947, 154

Benzing (1955a, 1062–63/114–15) summarized the Tungusic interrogativa as follows:

xai* “who, which” (xa-gī*?); dir. **xa-ba-sïkī* “where”; **xa-lī* prolat. “when”; dat. **xa-dū* “how much”, **xa-dū-rā* “multiple times”; **xa-son* “how much, how big”; **xōni* “how” < **xa-oni*.

**jā* “what”; **ja-xōni* “how what” (cf. WrMo. *yaŋun* “what”); **jā-lā* loc. “where”.

ŋüi* “who” (ŋü-gī*?).

It is apparent that the case endings characterizing the interrogatives in Core Altaic correspond to the endings analyzed in the section of the personal pronouns and by the way, of nouns in general.

7.3.4. Middle Korean interrogative pronouns and adverbs

nwú “who” < Old Kor. *NWUki* (Vovin 2009, 67).

mùsú, *mùsúm*, *mùsúk* “what”, *mùsús* “which” (Vovin 2009, 66).

ènú “which” < OKor. *eno* (Vovin 2011, 67) < **e-* “what/how” + **no* parallel to OJp. *n-ö* ‘attributive form of the defective verb *n-* “to be”’ (Vovin 2005–09, 325).

:estyé, *:esté*, *:estyéy* “how” < **e-is-ti* *”how-exist-ADV.” (Vovin 2009, 66).

encèy “when” < **en-ce[k]i* (Vovin 2009, 67); cf. MKor. *cek* “time” (Martin 1992, 440, 477).

ètúy “where” < **èntúy* (no lenition) = *ènú* “which” + *túy* “place” (Vovin 2005–09, 325).

ká & *kwó* ‘interrogative particle’ (Vovin 2009, 128–29).

7.3.5. Japonic interrogatives and adverbs

Old Japanese

	WOJp.	EOJp.	pRy.
who	*ta- ~ tare*	*ta- ~ tare*	**ta- ~ *taro*
what	*nani* < **n-anu-*	*aN-*	**nau*
which	*iNture*	*iNture*	**entu-re*

	WOJp.	EOJp.	pRy.
where	*iNtu ~ iNtuku ~ iNtuti*	*iNtu ~ iNtuti ~ iNtusi*	**entu-ma*
how	*ika*	*ika*	**e-ka*
how many	*iku ~ ikura ~ ikuNta*		**e-ku*
when	*itu*	*itu*	**etu*
why	*naNsö ~ naNtō*		
interrogative particle	*ka*	*ka*	**ka*

Vovin 2009, 66–67; Id. 2005–09, 300–39, 1220–30

Vovin's proto-Ryukyuan reconstructions may be illustrated by the following examples:

Interrogative	pRyukyu	Yuwan	Hateruma	Ogami	Miyako	
Pronoun/adv.					Hirara	Irabu
who	**ta– ~ *taro*	*taru / tarɨ*	*ta*	*taru*	*to:*	*taru*
what	**nau*	*nuu*	*nu*	*nau*	*no:*	*nau*
which	**entu-re*	*dɨru*			*nzi*	
where	**entu-ma*	*daa*	*za*	*nta / ita*	*iza*	*nza*
how	**e-ka*					*ikja*
how many	**e-ku*	*ikjassa*		(*naunupussa*)		
when	**etu*	*ɨcɨ*	*icï*	*iks*	*itsi*	*itsi*
why		(*nuusjate*)	*ne*	(*nauripa*)		

Proto-Ryukyuan – Vovin 2005–2009, 300–335.

Yuwan, Hateruma, Ogami – see *An Introduction to Ryukyuan Languages*, edited by Michinori Shimoji & Thomas Pellard. Tokyo: Research Institute for Languages and Cultures of Asia and Africa, 2010, 51, 199, 129 respectively.

Miyako – see Nikolay Nevskiy's *Miyakoan dictionary: reconstruction from the manuscript and its ethnolinguistic analysis*, ed. by Aleksandra Jarosz. Poznan: PhD. Thesis, 2015: p. 336.

7.3.6. Probably inherited Altaic interrogative pronouns and adverbs

Both the probable and hypothetical cognates among interrogatives may be summarized as follows:

	Turkic	Mongolic	Tungusic	M/*OKorean	p-Japonic
who	**kem*	**ken & *ke*		*?*NWUki*	
which	**kaṅu* < **ka(n)ju*?		**xai*; **xa-* how	*ká & kwó*	**ka*
where	**kan-*	**qana & *ken*			
what$_1$	**je-*?	**yaγun & *yan*	**jā & *ja-xōni*	**e-* in *ènú* which < **eno* *estyé* how < **e-is-ti*	**e-ka* how **etu* when
what$_2$	Čuvaš **min*			*mùsú*	
who / what			**ŋüi* who < **nüKi*?	**NWUki* > *nwú* who	**(n-)anu* what
who / what	Yakut *tuox* what				**ta* who

8. Altaic Numerals in etymological perspective

8.0. Methodological approach

Numerals represent a specific semantic field, where deep archaisms can appear besides recent loans in various language groups. The comparative method allows us to stratify different layers in lexicon: 1. Substrata; 2. Inherited lexicon; 3. Adstrata. 4. Superstrata. Sociolinguistics mentions situations, when forms of the same meaning, but of various origins, are used in parallel, one alongside another.

For the study of numerals these steps should be realized:

1. Summarization of the most archaic forms, dialect variants and derivatives.

2. Internal reconstruction.

3. Analysis of the internal structure of the whole system of numerals.

4. Discussion of other systems of numerals from the point of view of semantic typology.

5. Evaluation of probable external parallels.

5.1. External parallels that represent transparent structures, e.g. compound numerals, in contrast to unetymologizable structures in the subject language, indicate borrowing from a neighbouring language into the subject language.

5.2. Parallels which cannot be explained as loans and are in agreement with established sound rules, may represent cognates inherited from a common protolanguage.

The Altaic hypothesis in its wider version supposes a genetic relationship of Turkic, Mongolic, Tungusic, Koreanic and Japonic languages. One of the most frequent arguments of its opponents (Clauson, Ščerbak) is based on an imaginary absence of common numerals. The presence of common (= inherited) numerals represents certainly an important argument for a genetic relationship. But its absence has no explanatory value – there are more safely related languages with almost no inherited numerals, e.g. some Berber languages (e.g. in Senhaja all numerals were replaced by the Arabic forms; in Rifi, Ghomara or Awjila only “1” is inherited and in Kabyle, Nafusa or Siwi “1” & “2” are inherited and all other numerals are borrowed from Arabic) or Taic languages. The recent progress in the comparative historical phonology of Altaic languages allows us to identify more inherited numerals and to differentiate them from the numerals of substratal or adstratal origin.

8.1. Turkic Numerals

8.1.1. Survey of forms of the Turkic numerals

The numerals of the first decade, “100” and “1000”, are very uniform in the Turkic languages and the existing differences are caused practically only by the different phonetic developments in the individual languages.

language	1	2	3	4	5
Yakut	*biːr*	*ikki*	*ys*	*tyørt*	*biæs*
Dolgan	*biːr*	*ikki*	*ys*	*tyørt*	*biæs*
Tuva	*bir*	*iji*	*yʃ*	*dørt*	*beʃ*
Tofalar	*bĭŕæ*	*ih̃’i*	*ủš*	*d̯ɔ̀rt*	*b̯́eš*
Karagas	*bĭrǣ / bĭrɛ̄*	*ĭʔhĭ / ĭʔh̃ĭ*	*ytʃ*	*dørt*	*beʃ*
West Yughur	*bər*	*ʂigə*	*uʂ / vuʂ*	*diort*	*bes*
Saryg-Yughur	*per*	*išqy*	*uš*	*tʻört*	*pes*
Čulym	*pir*	*igi / ĭkĭ*	*ytʃ*	*tørt*	*pes*
Khakas	*pĭr*	*ĭkĭ*	*ytʃ*	*tørt*	*pis*
Šor	*pir*	*ijgi / iːgi*	*ytʃ*	*tørt*	*pɛʃ*
Teleut	*pir*	*eki*	*üč*	*tort*	*peš*
Oirot	*bir*	*eki*	*ytʃ*	*tørt*	*beʃ*
Kumandy	*pir*	*eki*	*ytʃ*	*tort*	*peʃ*
Kipčak	*bīr*	*yeki*	*üč / üš*	*dȫrt*	*bẹ̄š*
Cumanic	*bir*	*eki*	*üč*	*tört / dört*	*beš*
Kirgiz	*bir*	*eki*	*ytʃ*	*tœrt*	*beʃ*
Baškir	*bĕr*	*ikĕ*	*ɵ̆s*	*dyrt*	*biʃ*
Tatar Volga	*ber*	*ike*	*ɵɕ*	*dyrt*	*biʃ*
Tatar Baraba	*pir*	*iki*	*üc*	*tort*	*päš*
Kazakh	*bɘr*	*i̯ɘkɘ*	*ʉʃ*	*tyʉ̯rt*	*bi̯ɘs*
Karakalpak	*bɪr*	*ʲekɪ*	*ʏʃ*	*tørt*	*bes*
Nogai	*bir*	*eki*	*yʃ*	*dørt*	*bes*
Karačai-Balk.	*bir*	*eki*	*ytʃ*	*tørt*	*beʃ*
Kumyk	*bɨr*	*ɛki*	*yç*	*dərt*	*bɛʃ*
Karaim	*bir*	*æki*	*ytʃ*	*dʲortʲ*	*bʲæʃ*
Crimea Tatar	*bir*	*eki*	*ytʃ*	*dørt*	*beʃ*
Uzbek	*bɪr*	*ɪkkɪ*	*ytʃ*	*tørt*	*beʃ*
Ili Turki	*bir*	*ekki*	*ʉtʃ*	*tɵrt*	*beʃ*
New Uyghur	*bir*	*ikki*	*ytʃ*	*tøt*	*bɛʃ*
Čaghatai	*bir*	*ikki / iki*	*üč*	*tort*	*beš*
Khalaj	*biː*	*ækki*	*yʃ*	*tœːrt*	*beːʃ*
Karakhanid	*bīr*	*ikki / ẹkki*	*üč*	*tört / tȫrt*	*bḗš*
Old Uyghur	*bir*	*eki / ẹki*	*üč*	*tort*	*bẹš*
Orkh. Runic	*bir*	*iki / ẹki*	*üč*	*tort*	*bẹš, biš*
Salar	*bər*	*igi*	*udʒ*	*diot / døt*	*beʃ*
Kaškai	*biːɹ*	*ɪʔkkʰe*	*ʏtʃ / ɪːtʃ*	*dørd̥*	*bʲeːʃ*
Old Oghuz	*bir*	*iki / ikki*	*üč*	*tört / dört*	*bẹš*
Turkmen	*bir*	*iki*	*ytʃ*	*dœːrt*	*bœːʃ*
North Azeri	*bir*	*iki*	*ytʃ*	*dørt*	*beʃ*
Turkish	*bir*	*iki*	*üç*	*dört*	*beş*
Gagauz	*bir / bir*	*ici / iki*	*ytʃ / ytʃ*	*dørt / dørt*	*beʃ / beʃ*

language	1	2	3	4	5
Čuvaš$_1$ Čuvaš$_2$	*pʲěrʲe* *něppe*	*igʲě* *иккě*	*visʲě* *виççě*	*tăvadă* *măвammă*	*pʲilʲěk* *пиллěк*
Old Bulgar	**bir*	**iki*	**večim* 3rd	**tüät*	**biäl* **e'tem* 5th
Proto-Turkic	**bĭ̄r*	**ẹkki*	**ü'č*	**dō̄rt*	**bē̄łk*

language	6	7	8	9	10
Yakut	*alta*	*sættæ*	*aʁɯs / aʁɨs*	*toʁus*	*uon*
Dolgan	*alta*	*hættæ*	*agɨs*	*togus*	*uon*
Tuva	*aldɤ*	*tʃedi*	*sɛs*	*tos*	*on*
Tofalar	*altï*	*ḱśedɪ*	*śeĥɔs*	*d̯ɔĥɔs*	*ɔn*
Karagas	*aʔltɯ̆*	*tʃedĭ*	*seʔhes*	*toʔhos*	*on*
West Yughur	*ahldə*	*jidə*	*saɢəs / saqəs*	*dohɢəs / dohqəs*	*on*
Saryg-Yughur	*ał'ty*	*jite*	*sekes*	*to'qys*	*on*
Čulym	*altɯ*	*jedi / jættĭ*	*segiz /sɛgĭz*	*toʁuz*	*on*
Khakas	*altɯ / altɨ̆*	*tʃitĭ*	*sigĭz*	*toʁɯ̆z /toʁĭz*	*on*
Šor	*altɯ*	*tʃɛtti*	*sɛgiz*	*toɣuz*	*on*
Teleut	*altï*	*jeti*	*segis*	*toɣus*	*on*
Oirot	*altɯ̆*	*dʲeti / dʒedi*	*segiz*	*toɣuz*	*on*
Kumandy	*altɯ*	*tʃeti*	*seɣis*	*toɣus*	*on*
Kipčak	*altï*	*yetti / yeti*	*sekiz / sekkiz*	*ṭokuz*	*on*
Cumanic	*altï*	*yetti / yeti*	*segiz*	*toɣuz*	
Kirgiz	*altɯ*	*dʒeti*	*seɣiz*	*toʁuz*	*on*
Baškir	*altɯ̆*	*jětě*	*higěð*	*toɣɯ̆ð*	*un*
Tatar Volga	*altɤ*	*zide*	*sigez*	*tuɢɤz*	*un*
Tatar Baraba	*alttï*	*jädi*	*säkis*	*toʁïs*	*on*
Kazakh	*altə*	*ʒi̯ɘtɘ*	*si̯ɘɣɘz*	*tu̯ʊʁəz*	*u̯ʊn*
Karakalpak	*altɨ*	*ʒetɪ*	*segɪz*	*toɣɨz*	*ʷon*
Nogai	*altɨ*	*jeti*	*segiz*	*toʁɨz*	*on*
Karačai-Balk.	*altɯ*	*dʒeti*	*segiz*	*toguz*	*on*
Kumyk	*altə*	*jetti*	*sɛgiz*	*tɔʁʊz*	*ɔn*
Karaim	*altɯ*	*jædi*	*sʲægiz*	*toɣuz*	*on*
Crimea Tatar	*altɪ*	*jedi*	*sekiz*	*doquz*	*on*
Uzbek	*ʌltɪ*	*jettɪ*	*sækkɪz*	*toqqʊz*	*on*
Ili Turki	*altə*	*jetti*	*sekkiz*	*tɵqqʉz*	*ɵn*
New Uyghur	*altɛ*	*jɛttɛ*	*sɛkkiz*	*toqquz*	*on*
Čaghatai	*altï*	*yetti / yeti*	*säkkiz / sekiz*	*toqquz / toquz*	*on*
Khalaj	*alta*	*jeːtti*	*sækkiz*	*toqquz*	*oːn*
Karakhanid	*altī̆*	*yetī*	*sekiz*	*tokūz*	*ōn*
Old Uyghur	*altī̆*	*yẹti*	*sekiz*	*tokuz*	*on / oon*
Orkh. Runic	*altï*	*jiti, jẹti*	*sẹkiz*	*toquz*	*on*
Salar	*altə /altʃi*	*jidʒi / jidə*	*sekiz*	*doquz*	*on*
Kaškai	*ʔaltoᵊ*	*jeʔdde*	*sækkʰɪz̥*	*doqqoᵊz̥*	*ᵊon*
Old Oghuz	*altï*	*jedi / jeddi*	*sekiz / sekkiz*	*toq(q)uz / doquz*	*on*
Turkmen	*altɨ*	*jedi*	*θekið*	*dɔquð*	*ɔːn*
North Azeri	*altɯ*	*jeddi*	*sækkiz*	*dogguz*	*on*
Turkish	*altɪ*	*yedi*	*sekiz*	*dokuz*	*on*
Gagauz	*altɯ / altɨ*	*jedi / jedi*	*seciz / segiz*	*dokuz / dokuz*	*ᵘon / on*
Čuvaš$_1$ Čuvaš$_2$	*uldă* *улттă*	*sʲit(ʃ)ě* *çиччě*	*sagăr* *саккăр*	*tăʁăr / tăxăr* *măxxăр*	*vună* *вуннă*
Old Bulgar	**altï*	**ǰiäti*	**säkir*	**toxur*	**van*
Proto-Turkic	**altï*	**ʒ́et(t)i*	**sek(k)iř*	**tok(k)uř*	**ōn*

language	20	30	40	50	60
Yakut	*sy:rbæ*	*otut*	*tyørt uon*	*biæs uon*	*alta uon*
Dolgan	*hy:rbæ*	*otut*	*tyørt uon*	*biæs uon*	*alta uon*
Tuva	*tʃe:rbi*	*yʒen*	*dørten*	*beʒen*	*aldan*
Tofalar	*ih̃'ɔn*	*üħźen*	*dɔ́rten*	*b́eħźen*	*altɔn*
Karagas	*iʔh̃jon*	*ydʒøn*	*dørtøn*	*bedʒøn*	*aʔlton*
West Yughur	*jiɣərmə // εigon*	*ohdəs // hudʒun / hudʒon*	*diorton*	*beson*	*ahldon*
Saryg-Yughur	*jiɣyrmo*	*ü'čon*	*törton*	*peson*	
Čulym	*jærvæ*	*oduz*	*qɯrɯq*	*elig*	*alton*
Khakas	*tʃibĭrgĭ*	*otɯs*	*χɯrɯχ*	*ilĭg*	*alton*
Šor	*tʃɛgirbɛ // iygon*	*oduz // yʒon*	*qɯrɯq // tørton*	*ɛlig // pɛʒon*	*alton*
Teleut	*jirme*	*odus*	*qïrïq*	*ölü*	*alton*
Oirot	*dʲirme / i:rme*	*otus / oduz*	*qɯ̆rɯ̆q//tørtøn*	*beʒen*	*altan*
Kumandy	*tʃegirbe / tʃigirbe*	*odus*	*kɯrɯk / qɯrɯq*	*elig*	*altan*
Kipčak	*yegirmi*	*oṭuz*	*kïrk*	*ellī*	*alṭ(ï)mïš*
Cumanic		*otuz*			
Kirgiz	*dʒɯjɯɾma*	*otuz*	*qɯɾq*	*ely:*	*altɯmɯʃ*
Baškir	*jĕgĕrmĕ*	*utɯ̆ð*	*qɯrq*	*illĕ*	*altmɯ̆ʃ*
Tatar Volga	*jegerme*	*utɤz*	*qɤrɤq*	*ille*	*altmɤʃ*
Tatar Baraba	*jigirmä*	*otïs*	*kïr(ï)k*	*äli*	*altmïš*
Kazakh	*ʒəjəɾma*	*u̯ʊtəz*	*qəɾəq*	*i̯ɘlɘw*	*alpəs*
Karakalpak	*ʒɪgɪrma*	*ʷotɨz*	*qɨrq*	*ʲelʲu*	*alpɨs*
Nogai	*jɨrma*	*otuz*	*qɨrq*	*elli*	*alpɨs*
Karačai-Balkar	*dʒɯjɯrma*	*otuz // dʒɯjɯrma bla on*	*kɯrk // eki dʒɯjɯrma*	*elli // eki dʒɯjɯrma bla on*	*altmɯ̆ʃ // ytʃ dʒɯjɯrma*
Kumyk	*jigirma*	*otuz*	*qɨrq*	*ɛlli*	*altmɨʃ*
Karaim	*ægirmi*	*otuz*	*qɯrq/χ*	*æŋli*	*altmɯʃ*
Crimea Tatar	*jigirmi*	*otuz*	*qɪrq*	*elli*	*altmɪʃ*
Uzbek	*jɪgɪrmæ*	*ottɪz*	*qɪrɪq*	*ællɪk*	*ʌltmɪʃ*
Ili Turki	*jigirmi*	*ɵttuz*	*qərq*	*ellik*	*altəməʃ*
New Uyghur	*jigirmɛ*	*ottuz*	*qiriq*	*ɛllik*	*altmiʃ*
Čaghatai	*yigirmä/yigirmi*	*ottuz ~ otuz*	*qïrq*	*ellig*	*altmïš*
Khalaj	*jiɣiɾmi*	*hottuz*	*qɨɾk*	*ælli*	*ælli o:n // **ʃæst***
Karakhanid	*yegirmē*	*ottuz*	*kïrk*	*ellig*	*altmïš*
Old Uyghur	*yegirmī*	*otuz*	*kïrk*	*e(l)lig*	*altmïš*
Orkh. Runic	*jęgirmi, jigirmi/ä*	*otuz*	*qïrq*	*ęlig, ilig*	*altmïš*
Salar	*jiɣirme*	*odtus*	*ɢərəχ*	*elli*	*elli on // ahmuʂ*
Kaškai	*jirme: / jirmə*	*ottʰʊʐ*	*ɢɨrx*	*ʔalle*	*ʔalḏmɵʃ*
Old Oghuz	*jigirmi*	*otuz*	*qïrq / qïrx*	*ellig*	*altmïš*
Turkmen	*jɨɣrimi*	*ɔtuð*	*qɯrq / qɨrq*	*elli*	*altmɯʃ / altmɨʃ*
North Azeri	*ijirmi*	*otuz*	*gɯrx*	*ælli*	*altmɯʃ*
Turkish	*yirmi*	*otuz*	*kɪrk*	*elli*	*altmɪş*
Gagauz	*jiɾmi / jirmi*	*ᵘotuz / otuz*	*kɯɾk / kɨrk*	*jelli / elli*	*altmɪʃ / altmɨʃ*
Čuvaš$_1$ Čuvaš$_2$	*sʲirʲĕm* *çupĕм*	*vădăr* *вămăp*	*xĕrĕx* *xĕpĕx*	*ală* *аллă*	*utmăl* *утмăл*
Old Bulgar	**ǰiärim*	**votur*	**qïrq*	**älü*	
Proto-Turkic	**ʒ́ęgirbi*	**hottuř / *holtuř*	**k(')ïr'k*	**el(l)ig*	**altbïł*

language	70	80	90	100	1 000	10 000
Yakut	*sættæ uon*	*aʁɨs uon*	*toʁus uon*	*syːs*	***tihintʃa***	
Dolgan	*hættæ uon*	*agɨs uon*	*togus uon*	*hyːs*	***tihiːtʃa***	
Tuva	*tʃeden*	*sɛzen*	*tozan*	*tʃys*	*bir muŋ*	
Tofalar	*ħśedɔn*	*śeɬ̂ʾezɔn*	*ʤɔɦ̂ozɔn*	*ħśʉs*	***tuːśi(ŋ)hi***	
Karagas	*tʃedon*	*seʔhson*	*toʔhozon*	*tʃys*	***tuːsitʃi***	
West Yughur	*jidon*	*dohɑəson*		*jyz*	*bər miŋ*	
Saryg-Yughur	*ʒiton*	*saqyson*	*toʾqyson*	*jüz*	*myŋ*	
Čulym	*jedon*	*se(æ)kson*	*toqson*	*jys*	*pir muŋ*	
Khakas	*tʃiton*	*sigĭzon*	*toɣuzon*	*pĭr tʃys*	*pĭr muŋ*	
Šor	*tʃɛtton*	*sɛgizon*	*toɣuzon*	*tʃyz*	*muŋ*	
Teleut	*jeton*	*segizon*	*toguzon*	*jüs*	*pir muŋ*	*on muŋ*
Oirot	*dʲeden*	*segizon*	*toɣuzon*	*dʲys*	*bir/pir muŋ*	
Kumandy	*tʃetten*	*segizan*	*toguzan*	*tʃɣs*	*muŋ*	
Kipčak	*yetmiš*	*seksen*	*toksan*	*yüz*	*mīn/min/bin*	*tümen*
Cuman					*miŋ*	*tümen*
Kirgiz	*ʤetimiʃ*	*seksen*	*toqson*	*ʤyz*	*miŋ*	*tymœn*
Baškir	*jětměʃ*	*hikæn*	*tughan*	*jəð*	*měŋ*	
Tatar Volga	*ʑitmeʃ*	*siksæn*	*tuqsæn*	*jəz*	*meŋ*	
Tatar Baraba	*jätmiš*	*säksän*	*toksan*	*jüs*	*mïŋ*	
Kazakh	*ʒʲətpɔs*	*sʲɔksʲɔn*	*tʊɔqsan*	*ʒʁz*	*mən*	
Karakalpak	*ʒetpɪs*	*seksen*	*toxsan*	*ʒyz*	*miŋ*	
Nogai	*jetpis*	*seksen*	*toqsan*	*jyz*	*bir miŋ*	
Karačai-Balkar	*ʤetmiʃ // ytʃ ʤɯjurma bla on*	*seksen // tørt ʤɯjurma*	*toxsan // tørt ʤɯjurma bla on*	*ʤyz*	*miŋ*	
Kumyk	*jetmiʃ*	*sɐksɐn*	*tɔqan*	*jyz*	*miŋ*	
Karaim	*jætmiʃ /jætʲimiʃ*	*sʲæksʲanʲ*	*toxsan*	*juzʲ*	*minʲ*	
Crimea Tatar	*jetmiʃ*	*seksen*	*doqsan*	*jyz*	*biŋ / biŋ*	
Uzbek	*jetmɪʃ*	*sæksʌn*	*toqsʌn*	*jyz*	*bɪr mɪŋ*	
Ili Turki	*jettimiʃ*	*sæksæn*	*tɵχsan*	*jʁz*	*miŋ*	
New Uyghur	*ʤɛtmiʃ/jɛtmiʃ*	*sɛksen*	*toqsan*	*ʤyz*	*bir miŋ*	
Čaghatai	*yetmiš*	*seksän*	*toqsan*	*yüz // **sad***	*ming//**ḥazār***	*on ming// **tuman***
Khalaj	*ælli jiɣirmi // **hafto:d***	*ælli hottuz // **hafto:d***	*ælli qirk // **nævæd***	*jyːz // **sæd***	*miŋk*	
Karakhanid	*yetmiš*	*seksön*	*toksōn*	*yüz*	*miŋ*	*tümen*
Old Uyghur	*yętmiš*	*sekiz ōn*	*toksōn*	*yüz*	*bïŋ / mïŋ*	*tümen*
Orkh. Runic	*jętmiš, jitmiš*	*sękiz on*	*toquz on*	*jüz*	*bʲĭŋ / mʲĭŋ*	*tümän*
Salar	*elli jiɣirme // jehmuʃ*	*elli odtus // sexsen*	*elli gərəχ // toxsen*	*jyz*	*miŋ*	
Kaškai	*jeḏməʃ*	*sajsan*	*doxsan*	*yːz*	*mɪn / miŋ*	
Old Oghuz	*jetmiš*	*seksen*	*toqsan/doqsan*	*jüz*	*biŋ / miŋ*	
Turkmen	*jetmiʃ*	*θegθen*	*tɔgθan*	*jyð*	*myŋ*	
North Azeri	*jetmiʃ*	*sæksən*	*doxsan*	*jyz*	*min*	
Turkish	*yetmiş*	*seksen*	*doksan*	*jüz*	*bin*	
Gagauz	*jetmiʃ/etmiʃ*	*secsen/seksæn*	*doksan* / id.	*jyz / yz*	*bin /bin*	
Čuvaš$_1$ Čuvaš$_2$	*sʲitmʲĕl* *çитмĕль*	*sakăr vună* *сакăрвуннă*	*tăʁăvună* *măхăрвуннă*	*sʲĕr* *çĕр*	*pʲin* *пин*	
Old Bulgar			**toxur-van*	**jür*		
Proto-Turkic	**ʒetbił*	**sek(k)iř-ōn*	*tokkuř-ōn*	**ʒ̈ŭř*	**biŋ*	

Note: The bold letters indicate borrowings. The symbol / separates variants of one form; // separates different forms.

8.1.2. Sources of the Turkic numerals

Azerbaijani: Claus Schönig, 1999/N. **Baškir:** Claus Schönig, 1999/N. **Čaghatai:** András Bodrogligeti 2001: 146–7; Gerard Clauson 1972. **Čulym:** Claus Schönig, 1999/N. **Čuvaš$_1$:** Claus Schönig, 1999/N. **Čuvaš$_2$:** Kate Lindsey, 2012/N. **Crimean Tatar:** Remzije Berberova, 2013/N. **Dolgan:** Vladimir Monastytev, 2007/N. **Gagauz$_{1/2}$:** Astrid Menz, 2007/N; Claus Schönig, 1999/N. **Ili Turki:** Reinhard F. Hahn 1991/N. **Karačai-Balkar:** Steve Seegmiller, 1999/N. **Karagas:** – Claus Schonig, 1999/N. **Karaim** (Lithuania)**:** Claus Schönig, 1999/N. **Karakalpak:** Roar Ljøkjell, 2006/N. **Karakhanid:** Gerard Clauson 1972. **Kaškai:** Christine Bulut, 2007/N. **Kazakh:** Jonathan North Washington, 2011/N. **Khakas:** Claus Schönig, 1999/N. **Khalaj:** Gerhard Doerfer, 1999/N. **Kipčak:** Gerard Clauson 1972. **Kirgiz:** Jonathan North Washington, 2011/N. **Kumandi = North Altai:** Sergey N., 2009/N. **Kumanic:** Gerard Clauson 1972. **Kumyk:** Paul and Linda Humnick, 2007/N. **Nogai:** Claus Schönig, 1999/N. **Oirot = South Altai:** Claus Schönig, 1999/N. **Old Bulgar:** Johannes Benzing, 1959. **Old Oghuz:** Ė.A. Grunina 1997: 87–8. **Old Uyghur:** Gerard Clauson 1972. **Orkhon Runic Turkic:** Kononov 1980. **Proto-Turkic:** Mudrak 1993, modified in Blažek 1999: 103. **Salar:** Lin Lianyun, 1986/N. **Saryg-Yughur:** Tenišev 1997: 351. **Šor:** Claus Schönig, 1999/N. **Tatar of Volga:** Teija Greed, 2008/N. **Tatar of Baraba:** Dmitrieva 1966: 162. **Teleut = North Altai** (dial. different from Kumandy)**:** Tokmašev 2008: 84–5. **Tofalar:** Rassadin 1971: 79. **Turkish:** Claus Schönig, 1999/N. **Turkmen:** David Gray, 2007/N. **Tuvin:** Vitaly Voinov, 2016/N. **(New) Uyghur:** Zhao Xiangru & Zhu Zhining, 1985/N. **Uzbek** (China)**:** Claus Schönig, 1999/N. **West Yughur:** Chen Zhongzhen & Lei Xuanchun 1985/N. **Yakut:** Claus Schönig, 1999/N.

8.1.3. Comparative-etymological analysis of the Turkic numerals

1.1. Turkic **bĭr* "1" is usually compared with Written Mongol *büri*, Khalkha *bür* etc. "each, all" (Ramstedt 1907, 5). Miyake (p.c.) mentions the semantic parallel in Proto-Austronesian **isa* "1" > Leti *ida* "each" (Blust). Miller (1971, 230) added Old Japanese *pito-tu* < **pitə* and Middle Korean *pĭrís*, *pĭrísó* "at first; to begin", but Vovin (2005–09, 351) accepts only the Korean-Japonic comparison, deriving MKor. *-r-* (*-l-* in other transcriptions) via lenition from **-t-*. In *EDAL* 364 Starostin, Dybo & Mudrak reconstruct Altaic **bi̯uri*, while Starostin (1991, 99) preferred **birV*, but the Turkic-Mongolic and Korean-Japonic forms should be separated.

1.2. Tenišev (1978, 110) connected Turkic "1" with Turkic **barmak* "thumb, finger" (cf. Räsänen 1969, 63; *EDAL* 1093: **biarŋak*).

1.3. Čanyšev (1985, 78) speculated about a connection to Tatar *birgï* "near" and Old Turkic *berü* "hither". His comparison with IE **per H2/3-*"front, first" is doubtful.

2.1. Turkic **ẹkki* "2" has no unambiguous etymology. Ramstedt (1949, 195) compared it with Korean *pẹgi̯m /pəgim/* < Middle Korean *pàkím* "the next, the following, the one following" (with the same suffix as *čẹi̯m* "the first"). Starostin (1991, 284) added Old Japanese *p*(*w*)*oka*, Ryukyu *fòká*, Tokyo *hòka* (**pəka*) "other" and reconstructed Altaic **p*'*ek*'*V*, modified to **p*'*i̯òk*'*e* "pair, couple" in *EDAL* 1153. The expected semantical development is plausible, cf. Latin *secundus* "2nd" vs. *sequor* "I follow". But the initial pAlt. **p*'- implies *h*- in Khalaj, an archaic Turkic language from Iran. And here only the form *äkki* is attested (cf. Doerfer 1971a, 439).

2.2. It is possible to etymologize this numeral on the basis of the same semantic motivation. In **-ki* the suffix of ordinals can be identified, cf. Tuvin *birgi, ijigi, üškü, bëški* "1st, 2nd, 3rd, 4th, 5th", Old Turkic *baštiŋkï* "1st" (Ščerbak 1977, 151). A hypothetical primary root can be found in the verb **eg-,* cf. **eg-er-* "to follow" > Čaghatai *eger*-, Uzbek *egir*-, and with another extension Lobnor *ej-eš*-; a simple root appears probably in Old Turkic *iv*- "to follow" – see Sevortjan I, 242 (the phonetic development has an analogy e.g. in Old Turkic *övür-, öwür*- vs. Uzbek *o̧gir*- "to turn", see Sevortjan I, 498–499). A connection between **ẹkki* "2" and **eg-(er-)* was anticipated already by Vámbéry (see Sevortjan I, 245) and recently Tenišev (1978, 112).

2.3. The attempt deriving the numeral from the verb **ek*- "to sow" (Čanyšev 1985, 78 following Vámbéry; see Sevortjan I, 252) is not convincing for semantical reasons.

2.4. In principle, at least as a hypothetical alternative, an Iranian origin may also be taken in account, cf. Modern Persian *yek dīgar* "one second", *yek yek* "one each", Zoroastrian Pahlavi *ēk ēk*, Yaghnobi *īki īki* "one by one" (Emmerick 1992, 334–335).

3.1. Turkic **ü'ć* "3" (Mudrak; traditionally **ūč* – see Räsänen 1969, 518) is also rather puzzling. Ramstedt (1907, 9) compared it with Written Mongol *üčü-ken* "small", related to Tungusic **ŋūči-kūn* id. (Starostin 1991, 18, 43), explaining "few" > "3" (or vice versa!). A parallel semantic motivation may be found in some Australian languages: Ngarla *purrku* "3; a few"[154]; Anmatyerr *urrpety/rrpwety* "3", lit. "a few" vs. *akngerr* "4", lit. "many"[155].

3.2. Čanyšev 1985, 79 connected **ūč* with **ūč* "end, point, edge, beginning" (Sevortjan I, 612–13). Semantically it is really possible, cf. e.g. Dravidian **mu̲n*- "3" derived from **mu̲n*- > Tamil *mu̲n* "in front, prior", *mu̲ṉai* "front, face, point, sharpened

154 <https://mpi-lingweb.shh.mpg.de/numeral/Ngarla.htm>.
155 <https://mpi-lingweb.shh.mpg.de/numeral/Anmatyerr.htm>.

end, edge" etc. (Andronov 1978, 242; *DEDR* ##5020, 5052). The semantic motivation could look as follows: "protruding (finger)" > "middle-finger" > "three". But the different anlaut and vocalism in Khalaj *hūuč* "end" vs. *ūš*/*īč* "3" excludes this etymology.

3.3. In the Lamut dialect of Kamchatka Bay, Messerschmidt recorded a unique form *üttan* "3" (Anderson 1984, 53). If it is not just a misprint (cf. *ullan* by Strahlenberg 1730), it could reflect an original **üt-lan* or even **üč-lan*, fully compatible with Turkic **ūč*. The internal structure can also be recognized here. There was a suffix of ordinal numerals **-č*(*i*) attested in a simple form in Čuvaš *-š* (*pĕrĕš* "1st", *śiччĕm* "7th"), perhaps in Yakut *-s* (*ikkis* "2nd", *ühüs* "3nd", *uon bīris* "11th" etc), and in the Common Turkic compound suffix of ordinals **-inč*(*i*) (Ščerbak 1977, 144–150). The development could look like **ut– & *-č*(*i*) > **ü'ć.*

3.4. In *EDAL* 1032–33, the Turkic protoform **üč ~ *öč* "3" is reconstructed and connected with **otuŕ* "30" and further with proto-Mongolic **gu-* "3" and OJp. *myi* "3", all from hypothetical Altaic **ŋ[i̯u]*, plus various suffixal extensions.

3.5. The meaning "3" need not be the oldest one. Gordlevskij (1945, 141) demonstrated that in Kirgiz, the form *uč* was used in children's games in the meaning "5". In the game imitating a fight for the main tent of the Qaγan, the idiom *qьrqtьn ucu* "200" = "40 x 5" was used. If the meaning "5" was primary, the numeral **ūč* resembles very suggestively Kogurjŏ *üc//utu* and proto-Japanese **itu-* "5". But it is difficult to find any analogy in other systems of numerals.

3.6. There is again a hypothetical possibility of Iranian origin, cf. Buddhist Sogdian *ʾšty- & čšty-,* Khwarezmian *šy* "3" (Emmerick 1991, 321). A similar sound substitution is known e.g. from Uyghur *učmaq* (but Old Turkic *uštmax*, *učtmax*, Čuvaš *śătmaχ*) "paradise" < Sogdian *ʾwšt̲mʾχ* (Sevortjan I, 614).

4.1. Turkic **tōrtʌ* "4" (Mudrak) = **tōrt* (Räsänen) = **tōrd* (Poppe) = **dōrt* (Dybo) has been compared with Mongolic *dörben*, Tungusic **dujgin* and proto-Japanese **də-* "4" (Ramstedt 1907, 7–8; Hamp 1970, 194; Miller 1971, 220–221; Miller 1996, 116 added the puzzling Early Middle Korean (?) *towi* "3", corr. "4", recorded in the Japanese *Nichûreki* chronicle from the Kamakura period (1185–1375 CE), compiled from two chronicles, *Kaichūreki* and *Shōchūreki*, from the end of the preceding Heian era (794–1185 CE) – see Rahder 1941, 641–42; Lee 1977, 101–02. Miyake (p.c.) judges that the Japanese *kana* transcription of EMKor "4" probably reflects a [*d*]-like allophone of /*n*/, similar to *tirikuni* "8", corr. "7", corresponding to LMKor. *nìlkwúp*, OKor. of Baekje **nilgop* "7" (see §49). Cf. Lee & Ramsey (2000, 64) about pronunciation of modern Korean /*n*/, /*m*/ as [n^d], [m^b]. The Turkic final dental may perhaps be identified with the plural-collective marker attested in Old Turkic *-t* (cf. *oγlït "*descendants"; see Kononov 1980, 147). An indirect evidence can be found in Mongolic: Written Mongol *gučin* "30" & *döčin* "40", East Yughur *dørtʃin* "40" < **gu[r]tin & *dörtin* (cf. also Kir-

giz *qьrqtьn* “40” quoted above). Hamp (1970, 194) reconstructed even proto-Mongolic **gurt-guan* “3” *& *dört-guan* “4” with **-t-*. Poppe (1960, 110) assumed that the only regular counterpart of Mongol-Tungusic **d-* is Turkic **j-*. He concluded that the Turkic numeral must be borrowed. Starostin, following the idea of Illič-Svityč and Cincius about three series of occlusives, postulated Altaic **t* > Turkic **d-/*-t-*; Mongolic *d, ǯ(i)*; Tungusic **d-, *ǯi-,-t-*; Middle Korean *t-, -r-*; proto-Japanese **t* / **d*, and reconstructs Altaic **tōr ~*tūr* (1991, 71), while in *EDAL* 1377 the protoform **tǒj-* is proposed.

There is a promising internal etymology within Altaic, based on Kalmyk *dörū̄* “vier Finger breit; четвертъ”, reflecting **dörigü* (similarly *ɑuŕū̄* “drei Finger breit” < **γuriγu* – see Ramstedt 1907, 7 and 1935, 99, 155), which is terminated by a suffix comparable with Old Turkic *törtägü* “four together” (Clauson 1959, 29; Kononov 1980, 114). If we accept this identification, including the function of the suffixal extension, it is possible to connect the root **dör-* with Kalmyk *dörö* “Treppe, Erhöhung” < **döre* and Evenki *dörā̄* “Hügel” (missing in *TMS*; quoted after Ramstedt 1935, 99). The primary meaning could be extrapolated from *”knuckles [of a hand] together” > “four”. This conclusion agrees very well with Turkic data, where Čuvaš *türt* “Rücken” in the idiom *ală türt-ĕšĕ* “Handrücken” (Egorov 1964, 266; Doerfer 1971, 338) suggests a very similar primary semantic motivation.

4.2. Čanyšev (1985, 79) rejected the traditional Altaic comparanda and offers his own solution based on the identification of the final **-t* with the last syllables **-tï/*-ti* of the numerals “6”, “7”, postulating their original meaning “finger”. The root proper has to be related to **tū̄r-* “zusammenrollen” (Räsänen 1969, 506). Doubtful.

4.3. There is again an alternative to seek an Iranian origin of this numeral, cf. Old Iranian **(x)turi̯a-* > Avestan *tūiriia* “4th”, *āxtūirīm* “four times”. But the form **turθa–* (Bartholomae), much more resembling Turkic **tō̄rtʌ*, is not known in Iranian (Emmerick 1992, 321–324). The hypothetical Iranian source does also not explain the front vocalism in Turkic.

4.4. Róna-Tas (1974, 504) tried to identify the source of Turkic “4” in Tocharian B *śtwer* “4” (similarly the numerals “5”, “7”, “8”, “20”, “10 000”, should have also been of Tocharian [B] origin according to him). But his solution does not explain the final dental in the Turkic numeral.

5.1. Turkic **bēłk* “5” reconstructed by Mudrak (1993, 94–95; his reconstruction excludes his comparison with IE **penkᵘe* “5”) solves better the difference between Common Turkic **bēš* and Čuvaš *pil(l)ĕk* than the reconstructions of other authors (Räsänen: **bā̄š*, Doerfer: **bêš*, Sevortjan: **bę̄š*, Serebrennikov & Gadžieva: **bəš-* < **bāl-*), and at the same time confirms the old comparison with Turkic **bilek* “wrist, forearm”; Tungusic **bile-n* “wrist” (Ramstedt 1907, 12–13; Poppe 1960, 117; Räsänen 1969, 76; Sevortjan

II, 126, 145–146; *EDAL* 343: **bĭli*), and maybe MKor. *phǎr* “arm” < **pàrh*, cf. MKor. *kǎrk-/kirk-* “to shear, scrape” vs. Mongolic **kirga-* “to shear, shave”, Turkic **Kirk-* “to shear, scrape” (*EDAL* 792).

5.2. Benzing (1959, 731) assumed in the Turkic “5” an Iranian borrowing (cf. Persian *panǯa*). Concerning the final *-k* in Čuvaš, he saw an analogy in Urdu *pančak* “the group of 5”. But the medial cluster *-nǯ-* has been preserved in borrowings into Turkic, cf. Uyghur, MTk. *känč* “young, child”, besides Tajik *kēnǯä* “last child in family”, all from Mongolic, cf. Written Mongol *kenǯe* “child born to old parents”, Kalmyk *kenzə* “spätgeboren” (Doerfer I, 488).

5.3. Róna-Tas (1974, 502) derived late Turkic **bēš* from Tocharian B *piś* “5”.

6. Turkic **altɨ* “6” has not an unambiguous etymology either.

6.1. Ramstedt (1907, 15) saw in this word an alternative name for “thumb”, derived from **al-* “to take” (cf. *EDAL* 283), in the same way as **barmak* “thumb, finger” can be connected with Mongolic **bari-* “to catch, hold” (*EDAL* 328: otherwise).

6.2. Čanyšev (1985, 80) offered a modification “take a finger” on the basis of Turkic **al-* “to take” and a fictive form $^{+}$*tï* “finger”.

6.3. Hamp (1974b, 675–76) analyzed the numerals **alt-bił* “60”, **ǯet-bił* “70” as “the first after 50”, “the second after 50”, identifying **alt-* with Old Turkic *alt* “bottom”, *al* “side”, *alïn* “forehead”; cf. Čaghatai *al* “front side” (Räsänen 1969, 14; Sevortjan I, 124; *EDAL* 284–85: **ǻla* “front side” vs. **ale* “below, lower”). It would mean “6” = “[1] in front of [5]”. This point of view can be supported: if Mudrak (2005, 101), reconstructing Old Danube Bulgarian **etə* “5” (< pTk. **eti* with respect to hypothetical **et-liγ* “50” – see §14.2.) on the basis of the ordinal **ехтемъ** */e’tem/* “5th”, is right, the second component of this numeral can be identified with the Old Bulgarian “5” (the same may be said about the following numeral “7”). The numeral would be analyzable as **al eti* “in front of five” > **altɨ*.

7. Turkic **ǯet*(*t*)*i* “7” (Mudrak) = **jätti* (Starostin 1991) = **jętti* (*EDAL*) = **θäti* (Ščerbak) = **dêttē* (Doerfer) also lacks any convincing etymology.

7.1. Starostin (1991, 141) added Turkic **jätti* (< **jäddi*?) to Tungusic **nada-n* and Old Japanese *nana-* “7”, connected e.g. by Murayama (1958, 229), without any deeper etymological comments. But already Pritsak (1985, 212) and Starostin, Dybo & Mudrak (*EDAL* 959–60) tried to derive the numeral “7” from a common protoform in all branches, i.e. including Mongolic **dalugan* and Middle Korean *nìrkúp*, reconstructing **da-l/r/d/t-* and **nad[i]* respectively.

7.2. Ramstedt (1907, 16) explained the numeral from the verb **ǯē* “to eat” (Räsänen 1969, 194), seeking an analogy in Mongolic *doluγan* “7” vs. *doluγa-* “to lick”.

7.3. Hartmann (1900, 155) reconstructed **jet-di.* Supposing a specific role of the numeral "7", he derived it from the verb **jet-* "to reach, be enough" (see Räsänen 1969, 199; cf. Ket *oan* "7" vs. *oan* "many", mentioned by Castrén 1858, 42). This idea looks best from the point of view of phonetics and is acceptable in semantics too. It is possible to reconstruct the syntagm **jet-tü-eti* "a pair moreover five" (= **ǯ́-* by Mudrak). The root **tü-* is discussed in §20β.

7.4. In the first component of the numerals "7", "70", Hamp (1974b, 675–676) saw a regular Turkic counterpart of Writen Mongol *ǰitüger* "the second wife in a bigamous family" (but *-t* is an integral part of the suffix, cf. *γu-tuγar* "3rd" etc.).

7.5. Róna-Tas (1974, 500) thought about a hypothetical connection of Turkic "7" and pre-Tocharian B **seu̯te* "7", but admitted himself that it was very problematic.

8.1. Turkic **sek*(*k*)*iř* "8" is segmentable into **ek*(*k*)*i* "2" & **-ř* 'dual marker'; for the initial **s-* the meaning "without" can be expected. Its direct traces are not evident in Turkic, but the negative verb in Mongolic and Tungusic represent a promising candidate (Ramstedt 1907, 16–17): Written Mongol, Middle Mongol, Ordos *ese*, Dagur *ẹs*, Monguor *sẹ* etc. "not to be" (Poppe 1955, 287–288); Ewenki *ẹsin-* "not to be", Olča *-asi-/-ẹsi-* etc. (*TMS* II, 432; Poppe 1960, 65). Ramstedt (1982, 51) added Korean *ẹtta* : *ẹsẹ* : *ẹsi̯n* "to be contrary, be sideways", cf. Written Mongol *esergü* "contrary", *esergüče-* "to oppose"; further Miller (1985, 45) added Old Japanese *ese* "wretched, miserable, worthless, displeasing, poor". A hypothetical cognate in Turkic can be identified in the word-pair **äs-irkä-* vs. **irk-*, cf. Middle Turkic *äsirgä*(*n*) "sich über einen Verlust betrüben", Azerbaijan *äsirgä* "nicht gern geben" vs. Middle Turkic *irk* "sammeln" (Räsänen 1969, 50, 173). Cf. also the Old Turkic negative suffixes *-siz*, *-sïz*, *-suz*, *-süz*, *-sul* (Kononov 1980, 107; Menges 1974, 198). A weak point of this solution is absence of other numerals formed according to the subtractive pattern.

8.2. It is tempting to connect Turkic **sek*(*k*)*iř* "8" with pKorean **serik* "3" and Mongolic **serege* "trident" (see §45 and Ramstedt 1949, 225). Originally perhaps **serik-iř* with the dual ending expressing "second triad".

9.1. Proto-Turkic **tokkuř* "9" > Late Common Turkic **tokkaz* (Doerfer) = **toqyz* (Serebrennikov & Gadžieva) = **dokkəz* (Dybo) is compatible with Tungusic **togar* "span; четверть (measure)" (*TMS* II, 190–191) and Written Mongol *töge*, Khalkha, Buryat, Kalmyk *tō̄* "span (between thumb and middle finger)" (Lessing 1960, 832; Ramstedt 1935, 408); cf. also Turkic **t/dogar* "ausspannen" (Räsänen 1969, 483). The final **-ř* may be interpreted as the dual suffix (cf. *EDAL* 205), expressing perhaps that the "second (four-finger?) span was added to the hand/five". More about the connection of the verb "to stretch" with denotations of spans and consequently numerals in Indo-European see Schmid 1989, 23–24 (cf. IE **tens-* "to stretch": Sanskrit *vitasti-* "span" or Slavic **рьпǫ*,

pęti “to stretch” : **pędь* “span”, similarly Lithuanian *kẽsti*, *kečiù* (**kᵘetį̆ō*) “ausbreiten, ausspannen” vs. IE **kᵘetu̯o̯r-* “4”, originally perhaps “span”).

9.2. Ramstedt (1907, 17) assumed a connection with Written Mongol *toγa* “number” without any further explanation.

9.3. Miller (1971, 236) quoted the opinion of Lee about a connection of Turkic “9” and Koguryŏ *tę*(*k*) “10”.

9.4. Later Ramstedt (1957b, 66) compared Turkic “9” with Mongolic *toqur* ~ *tokir* “with inflexible fingers” (Ramstedt 1935, 398; Lessing 1960, 820: *tokir* “crippled, bent, stiff (of arms, legs)”). This solution could reflect the counting on the one hand, when the unbent fingers indicate the numerals of the first pentade, while the bent fingers designate the numerals of the second pentade. In this case the numeral “9” would be expressed as the hand with bent fingers with exception of the thumb.

9.5. Burykin’s comparison of Turkic “9” and Written Mongol *doluγan* “7” (1986, 30) is quite doubtful.

10.1. Turkic **ōn* “10” resembles suggestively Middle Korean *ón* “100” (Ramstedt 1949, 177), cf. Tungusic **ǯuwan* “10” vs. Written Mongol *ǰaγun* “100”. Krippes (1991, 149) speculated about the Old Korean (Silla) suffix of tens **-on* /**-un*. Ramstedt (1907, 20) also connected Turkic “10” with the suffix *-an* of tens in Mongolic, assuming the process of the change **-on* > **-an*. The primary meaning can be reflected in Middle Mongol [Secret History] *ono-* “to count” (Haenisch 1939, 125), which is probably related with Written Mongol *onu-* “to understand, find answer, hit target” (Lessing 1960, 615), and further Even *u̇nu̇-* ~ *ōnu̇-* ~ *ōno-* “to understand, think” (Poppe 1960, 70; *TMS* II, 275; *EDAL* 1185: otherwise).

10.2. On the other hand, there is Tungusic **ońō* “picture, ornament”, **ońa-* “to draw” (*TMS* II, 20; *EDAL* 600: otherwise), semantically comparable with Middle Mongol *har* “ornament”, metaphorically perhaps “sign” > “number” (?) – cf. the etymology of the Mongolic numeral **φarban* “10”, based on Middle Mongol (Secret History) *har*, Written Mongol *ar* “muster, ornament, figures” (Ramstedt 1949, 185) ~ “lines (on the palm of the hand or soles of the feet); stripes or patterns in textiles; incision, cut, notch” (Lessing 1960, 47).

10.3. Ramstedt’s attempt to include here also Written Mongol *on* “year”, must be rejected not only because of semantics (1 year = 12 months), but also for phonetic reasons (proto-Mongolic **φon* > Middle Mongol *hon*, Monguor *fän*, *χuan*, Khitan *po* (Ligeti 1960, 237–238; Kara 1990, 298); Common Mongol > Manchu *fon* “time”; Middle Korean *póm* “spring” with *p-* absent in *ón* “100” – see Poppe 1955, 30; Id. 1960, 155; also Khalaj *ūᵒn* “10” without the expected *h-* excludes this comparison).

10.4. Čanyšev (1985, 81; cf. also Hamp 1974b, 676) compared Turkic **ōn* “10” with Turkic **oŋ* “right” (“10” = “right hand ready”?), referring to Old Kipčak *ong* “10”

(Sevortjan I, 455–460). Similarly Horrowitz (1992, 411–19) explained Indo-European **dek̂m̥t-* "10" from **dek̂-k̂m̥t-* "right hand", modified by Blažek (1999, 297) as **dek̂-mn̥t-* id.

10.5. In *EDAL* 1191–92 Turkic **ōn* "10" is connected with Mongolic **ha-* in **harban* (i.e. **φarban* in our reconstruction) "10"; Tungusic **poba* "a bundle of ten squirerels, collection" (*TMS* II, 40); Old Japanese *-pwo* "hundred in names of hundreds". Again, Khalaj *ūºn* "10" without the expected *h-* questions this comparison.

11.1. Turkic **ʒ́ęgirbi* "20" has been usually reconstructed with medial **-rm-*, cf. **θiγ'irmä* ~ **θäγ'irmä* (Ščerbak), **ʒ́ęgirmi* (Mudrak). But Serebrennikov & Gadžieva (1979, 127–128) reconstruct **jiγ'irbə*, especially on the basis of Yakut *sūrbə*, Šor *čegirbe*, Tuva *čērbi*, Lebedin *jägärbä* etc. (cf. Sevortjan IV, 202; Poppe 1960, 87 about the tendency **-rb-* > **-rm-* in Turkic). The priority of the cluster **-rb-* confirms the hypothesis of Ramstedt (1907, 21) connecting the segment **-Vrbi* with Written Mongol *arban* "10" and a hypothetical Tungusic formant of tens **-arma-gi* > Solon *nadarangí*, *-inγí* "70", *ʒabkorinγí* "80" etc. Later Ramstedt (1957b, 66) offered a different solution: a comparison with Middle Mongol (Secret History) *ǰi'ürme-de-* "to double" <**ǰiγür-*. But Haenisch (1939, 91) translates Middle Mongol *ǰi'ur-me-* "noch zunehmen, noch schlimmer (stärker) werden". Regarding the existence of a parallel numeral for "20" in Turkic (**ikōn* reconstructed by Ščerbak 1977, 139) with a transparent internal structure (2 x 10), the form **ʒ́ęgirbi* can represent a compound of originally Mongolic words **ǰiγür-*(*me-*) *&* **[φ]arba*(*n*) "double ten".

11.2. Hamp (1974b, 676) connected the Turkic numeral "20" with *jigit* "youth, young man", postulating **jig-* "new, fresh". This explanation of the semantic motivation ("new" = "next ten"?) is not convincing.

12. Turkic **ottuř* ~ **ortuř* "30" (Mahmud of Kašghar had also recorded the meaning "3" – see Sevortjan I, 489) has no safe etymology.

12.1. Hamp (1974b, 676) proposed a dissimilation from **ortuř*, a derivative of **orta* "middle", supposing "middle (finger)" > "third (decade)". There are additional facts supporting and giving precision just for this solution: (1) The stem *orta* is really used for a denotation of the "middle finger": Sary-Yughur *urtamaq*; Kirgiz, Kazakh *ortan qol*, Teleut *orton qol* (Sevortjan I, 476–477); (2) Such forms as Uyghur *ot*(*t*)*ur, ottura*, Lobnor *ottoyo*, ?Čuvaš *varri* "centre" (Sevortjan I, 474–475) differ from the variant **ottuř* only in final *-r//-ř.* But this attractive etymology must be rejected because of the different anlaut in Khalaj *hottuz* "30" vs. *oˑrta* "middle".

12.2. Ramstedt (1957b, 66) connected the Turkic "30" with Korean *pottări* "bundle, knot", although the semantic motivation remains puzzling. This comparison implying the original Altaic **pʻ-* can be supported by the reconstruction of pre-Turkic **p-* based on Khalaj *hottuz* (Doerfer 1971b, 326 reconstructed Turkic **pottaz*).

12.3. In *EDAL* 1032–33, the Turkic protoform **otuŕ* “30” is reconstructed and connected with **üč* ~ **öč* “3” and further with proto-Mongolic **gu-* “3” and proto-Japanese **mi-* “3”, all from hypothetical Altaic protoform **ŋ[i̯u]*, plus various suffixal extensions (cf. § 3.4.).

13. Turkic **k(ʿ)ırk* “40” is again lacking any unambiguous etymology.

13.1. Halévy (1901, 40) speculated about a multiplication **ẹk(k)i-ř ʒ́ẹgirmi* “2 x 20” > **kʿiřg* > **kʿirk*, cf. the innovative formation of the same internal structure in Balkar *ëki ǰïǰïrma* “40” = “2 x 20” (Ščerbak 1977, 141 also quoted other examples of traces of the vigesimal system, e.g. Old Azerbaijani *iki ɸïrx* “80” = “2 x 40”, but both the Balkar and Old Azerbaijani systems are apparently influenced by languages of the Caucasian *Sprachbund*, where the vigesimal system is widespread even in such languages as Iranian Ossetic, e.g. Digor *duwinsæj* “40” = *duwæ* “2” x *insæj* “20” etc.).

13.2. Hamp (1974b, 676) sought a source in Turkic **kïr* “edge” (Kazan Tatar, Teleut), usually “mountain (ridge), shore, bank”, even “field, steppe”, while the derivative **kïrïg* has the meaning “edge, side, border” (Räsänen 1969, 265–266; *EDAL* 767–68). Hamp proposed a semantic motivation “edge (of the hand)” > “4(0)”. This semantic interpretation can be supported, if our etymology of Altaic **dör*[*i*] “4” is correct (see above, §4.1.).

13.3. Hamp’s alternative attempt connecting the numeral with **kïřa-* “to be short”, **kïřïk* “narrow” (“short finger” > “4(0)”), is less convincing.

13.4. In *EDAL* (p. 824) Turkic **k(ʿ)ırk* “40” is compared with Mongolic **qorin* “20” without any deeper explanation of differences in internal structure and meaning. It seems more promising to speculate about adaptation of the Mongolic syntagm **qoyir qorin* “two twenties” > **k(ʿ)ırk*. With regard to the probable Mongolic etymology of “20” (§11.1.) it would not be an isolated case.

14.1. Turkic **el*(*l*)*ig* “50” has been connected with Turkic **el*(*ig*) “hand” and **el*(*l*)*ig* “breadth of the finger / of the palm of hand”(?) (Sevortjan I, 260, 263–264, 266–267; Ramstedt 1907, 13 further cited Uryanči *äldik* “glove”; Gordlevskij 1945, 135; Räsänen 1969, 39; Hamp 1974, 676); *-lig* is probably an adj. suffix (Räsänen; Schott 1853: 18 saw in Turkic **-lig* a counterpart to Fenno-Ugric **luki* “10”). Let us mention that in *EDAL* 1024 Turkic **el & *elig* “hand” is connected with Tungusic **ŋāla* “hand” (*TMS* 1, 656–57).

14.2. The deviant form *ittik*, appearing in Zenker’s *Dictionnaire Turc-Arabe-Persan*, I (Leipzig 1866), 8, and Vel’jaminov-Zernov’s *Slovar’ Džagatajsko-Tureckij* (1868), is isolated and maybe wrongly recorded (Radloff I, 824). On the other hand, it suggestively resembles Old Danube Bulgar *ехтемъ* “5th”, implying **etə* “5” (Mudrak

2005, 101); Koguryŏ **utu*, proto-Japanese **itu-* "5". Mudrak (l.c.) judges that both **el-lig* "50" and *ittik* id. are explainable from **et-liγ*.

15.1. Turkic **alt-bïł* "60", **ʒ́et-bił* "70" (usually reconstructed **alt-mïl*$_2$, **jet-mil*$_2$, but Kazakh *alpəs*, Karakalpak, Nogai *alpıs* "60", and Kazakh *ʒi̯ətpəs*, Karakalpak *ʒetpıs*, Nogai *jetpis*, Karakirgiz *jetpiš* "70", confirm **b* instead of **m*, cf. also Serebrennikov & Gadžieva 1979, 127), consist of two components: (1) the stem identical with the numerals "6", "7"; (2) the stem, which can be identified with the numeral "5". Probably the most convincing explanation was presented by Hamp (1974b, 675): **alt-bïł-ōn* "(1st + 5) x 10" or "the first (decade) after 50" > **alt-bïł* "60"; **ʒ́et-bïł-ōn* "(2nd + 5) x 10" or "the second (decade) after 50" > **ʒ́et-bïł* "70". The parallel formation **bïł-ōn* "50" really exists, cf. Osman Turkish *beş on* (in Laws of Sulaiman the Magnificent, 16th cent.), Saryg-Yughur *peson*, West Yughur *beson*, Šor *pɛʒon*, Oirot, Tuvin *beʒen*, Tofalar *bʹeɦźen*, Karagas *bedʒøn*, Yakut-Dolgan *biæs uon* (Gordlevskij 1945, 136, 138; Ščerbak 1977, 140). The idea connecting the formant **-bił/-bïł* with **bə̄łk* "5" was first formulated probably by Dəmirčizadə (1968) – see Sevortjan I, 141, including the other etymological attempts.

15.2. A new etymological attempt was proposed by Miller (1996, 145). He compared the Turkic component, in his reconstruction **-mïl*$_2$, with Middle Korean *-múl* in *súmúl* "20", mentioning also North Korean *mŭs* "(a bundle of) ten (sheaves, fish, etc.), a plot of land from which ten sheaves of tax-grain are collected".

16. Turkic **sek*(*k*)*iř ōn* "80", **tokkuř ōn* "90", are preserved also as separate forms in the monuments of 8th cent. (Türkü, Uyghur and Manichean dialects). Only from 9th cent., a contraction appears, cf. Karakhanid *seksōn*, *toksōn* (Clauson 1959, 20).

17.1. Turkic **ʒ́ūř* (Mudrak) = **jūř* (traditionally) "100" resembles Midle Korean *'yərh* "10" (Lee) = *jər* "10", *jərəh* "a big quantity, number" (Starostin); Old Japanese *joro-du*, Middle Japanese *jòrò-du* "10 000"; pMo. **yersün* "9" may also belong here (see #27); if it is etymologically connected with WrMo. *yerü* "the most of ..", *yerüdügen* "generally, for the greatest part", *yerüŋkei* "common; public" (Ramstedt 1982, 62), the original meaning could have been **"the greatest [number]" (cf. #27). This semantic reconstruction remarkably corresponds with the reconstruction **jüz-on* (=**ʒ́ūř-ōn* after Mudrak), proposed already by Ramstedt 1907, 19 (cf. #52). Starostin, Dybo & Mudrak (*EDAL* 1545) reconstruct Altaic **ǯ[i̯ō]ŕo* *"a big number".

17.2. Miller (1971, 211–215) derived Turkic "100" from Altaic **dū-r*$_2$, interpreting this reconstruction as the plural "tens", and compared it with Tungusic **ǯuwan* "10" < **duwan* (not explaining **d-*) and Old Japanese *töwo* "10".

17.3. Menges (1968/1995, 97) offered a comparison of Turkic "100" with Dravidian **nūṟu* "100", deducing Altaic **ńüri/*ńürü.*

8.1.4. Comments on the Turkic numerals

Contrary to the numerals of the first decade, "100" and "1000", the numerals designating tens offer interesting differences. On the one hand, there are apparently archaic forms for the numerals "20", "30", "40" and "50", appearing in all old Turkic languages recorded before the 14th cent. and also in the most deviant Bulgar-Čuvaš branch. For these numerals it is characteristic no apparent relation to the numerals "2", "3", "4" a "5". It is a relatively rare situation, with analogy in (some) Korean tens and also in Old Egyptian, including Coptic. But also in the Turkic languages there are transparent decadic forms, besides the forms with the base "20" (Karačai-Balkar), but also "50" (Salar, Khalaj). Let us mention them concretely:

20 = 2 x 10: Tofalar, Karagas; variantly Saryg-Yughur, Šor;
30 = 3 x 10: Tuva, Tofalar, Karagas; variantly Saryg-Yughur, Šor;
30 = 20 + 10: Karačai-Balkar;
40 = 4 x 10: Yakut & Dolgan, Tuva, Tofalar, Karagas, Saryg-Yughur; variantly Šor, Oirot;
40 = 2 x 20: Karačai-Balkar;
50 = 5 x 10: Yakut & Dolgan, Tuva, Tofalar, Karagas, Saryg-Yughur, Oirot; varintly Šor;
50 = 2 x 20 + 10: Karačai-Balkar;
60 = 6 x 10: Yakut & Dolgan, Tuva, Tofalar, Karagas, Saryg-Yughur, Čulym, Khakas, Šor, Oirot, Kumandy;
60 = 3 x 20: Karačai-Balkar (var.);
60 = 50 + 10: Salar, Khalaj (var.);
70 = 7 x 10: Yakut & Dolgan, Tuvin, Tofalar, Karagas, Saryg-Yughur, Čulym, Khakas, Šor, Oirot, Kumandy;
70 = 3 x 20 + 10: Karačai-Balkar (var.);
70 = 50 + 20: Salar, Khalaj (var.);
80 = 4 x 20: Karačai-Balkar (var.); also Old Azerbaijan *iki ɟïrx* "80" = "2 x 40" (Ščerbak 1977, 141).
80 = 50 + 30: Salar, Khalaj (var.);
90 = 4 x 20 + 10: Karačai-Balkar (var.);
90 = 50 + 40: Salar, Khalaj (var.).

It is apparent that there is a core group of languages with a stronger tendency to the decadic structure of tens from "20" to "90", namely in Tofalar, Karagas, and differently in Saryg-Yughur and Šor. From "30" Tuvin should be added and from "40" to "70" Yakut with Dolgan, and Saryg-Yughur and Oirot. Besides the quoted languages

the numerals “60” and “70” are expressed as the multiplication 6 x 10 and 7 x 10 also in Čulym, Khakas and Kumandy languages. The remaining tens, “80” and “90”, have complete decadic structures in all Turkic languages. The cited languages belong to the Siberian branch of the Turkic languages in the classification of Lars Johanson (1998b) and independently of Oleg Mudrak (2009), or among the South Siberian or North Siberian languages according to the classification of Anna Dybo (2006). With regard to the unequal share in comparison with archaisms preserved in the Karluk-Kipčak-Oghuz superbranch and the Bulgar-Čuvaš branch, it is difficult to suppose that the decadic innovation was originally widespread in all the Siberian Turkic languages. After all, most of them preserve a parallel system based on the more archaic pattern. It indicates that the innovation was originally only local, probably spreading from the (Tuva-)Tofalar-Karagas center, perhaps under the influence of geographically close Mongolic languages. Quite unique is the **vigesimal** system in Karačaj-Balkar, which should be ascribed to the areal influence of its neighbors, namely Ossetic, Georgian, Adygean (= Čerkes) and Kabard. For comparison, among the Mongolic languages only Moghol uses the vigesimal system, apparently under the influence of Pašto, the dominant language in Afghanistan. Even less usual is the **quinquagesimal** system, based on the key-role of the numeral “50”. Among the Turkic languages it is used only in two, Khalaj and Salar. Their geographical distance – northern Iran versus northern China – excludes any direct contact in the recent past. In this case it is necessary to judge their genetic relation. Both languages are connected only in the classification mediated by *Ethnologue*. However, indirect traces indicate that the system of the Turkic tens was originally generally quinquagesimal, cf. **altbïł* “60” and **ʒetbił* “70” (best preserved in Kazakh, Karakalpak and Nogai languages), where the second component **bïł/*bił* is probably etymologically connected with the numeral **bēłk* “5”.

8.2. Mongolic numerals

8.2.1. Survey of forms of the Mongolic numerals

	1	2	3	4	5	6	7	8	9	10
WrMo.	*nigen*	*qoyar*	*γurban*	*dörben*	*tabun*	*jirγuγan*	*doluγan*	*naiman*	*yisün*	*arban*
MMo. f.	*niken* [C]*nigen*	*qoyar* [C]*qoyor* [SH]*jirin*	*qurban*	*dörben* [C]*dürben*	*tabun*	*jirqo'an* [C]*jirwa'an* [A]*jirγu'an*	*dolo'an*	*naiman* [B]*nayiman*	*yisün*	*harban*
Kitan ord. m./f.		*c.úr.er/én* *dz.úr.er*	*hu.úr.er/én*	*t.ur.uh* *d.úr.u* *t.ur.er/én* *d.úr.er/én*	*tau* *tau.un* *t.ad.o.ho* *t.od.o.ho/* *t.od.o.in*	***6**.er*	*da.lo.er*	***8**.ri.er*	*is* *is.er*	
Ordos	*nige/n*	*koyor*	*gurba/n*	*dörbö/n*	*tabu/n*	*jurgaa/n*	*doloo/n*	*naima/n*	*yisü/n*	*arba/n*
Khalkha attr.	*neg* *negen*	*xoyor*	*guraw* *gurwan*	*döröw* *dörwön*	*taw* *tawan*	*zurgan* *zurgaan*	*doloo* *doloon*	*naim* *naiman*	*yös* *yösön*	*araw* *arwan*
Buryat	*nege/n*	*xoyor*	*gurba/n*	*dürbe/n*	*taba/n*	*zurgaa/n*	*doloo/n*	*naima/n*	*yühe/n*	*arba/n*
Khamn.	*nege/n*	*koir*	*gůrba/n*	*durbe/n*	*tabu/n*	*jůrgaa/n*	*doloo/n*	*naima/n*	*yuhu/n*	*arba/n*
Kalmyk	*neg/n*	*xoyr*	*γurw/n*	*dörw/n*	*taw/n*	*zurγa/n*	*dola/n*	*nääm/n*	*yis/n*	*arw/n*
WrOirat	*nige/n*	*xoyor*	*γurba/n*	*dörbö/n*	*tabu/n*	*zurγā/n*	*dolō/n*	*nayima/n*	*yesü/n*	*arba/n*
ŠYug.	*nege /* *nige*	*γuur*	*γurwan*	*dörwen*	*taawin*	*jirγuun /* *jurγuun*	*doloon*	*naiman /* *neiman*	*hzisin /* *šisin*	*harwan*
EYug.	*niγe*	*guur*	*gurwan*	*dørwen*	*taawən*	*dʒurʁuun*	*dɔloon*	*naiman*	*ʃisun*	*harwan*
Monghl.	*nige*	*γoor(i)*	*γura(a)n*	*deeren /* *deeran*	*ta(a)wun*	*jirγoon /* *jiriγun*	*duloon /* *duluun*	*naiman /* *niiman*	*šzin*	*harwan* */ haran*
Manghr.$_1$	*nige*	*yor*	*γurbaŋ*	*derbaŋ*	*tabeŋ*	*ǯurγoŋ*	*doloŋ*	*naimaŋ*	*šʒeŋ*	*xarbaŋ*
Manghr.$_2$	***igə***	***liaŋgə***	***sangə***	***sŋgə***	***ʊugə***	***liugə***	***ʧige***	***pagə***	***jiugə***	***ʂigə***
Bonan	*nege*	*ywar*	*γuraŋ*	*diraŋ*	*tawuŋ*	*jerγuŋ*	*doluŋ*	*nimaŋ*	*yersuŋ*	*ha(w)raŋ*
Santa	*nie*	*γua*	*γuraŋ* *γuran*	*jieron*	*tawun*	*žiγon*	*dolon*	*neimaŋ* *neiman*	*yesun*	*hharaŋ* *hharon*
Kangjia	*niγe /* *niχɔ*	*guar*	*gurɔ /* *gurɔ*	*derɔ*	*tavun*	*ʒirʁuŋ*	*danlɔ /* *dɔlɔ*	*neimɔ*	*jasun*	*harɔ*
Dagur	*nek*	*xo(y)ir //* ***ɻa:n***	*gwareb /* *gwarbeŋ*	*durub /* *durbuŋ*	*taaw /* *taawuŋ*	*jirgoo /* *jirgooŋ*	*doloo /* *dolooŋ*	*naim /* *naimeŋ*	*(y)is /* *(y)iseŋ*	*xareb /* *xarbeŋ*
Moghol$_1$	*nikka*	*koyàr*	*ghorban*	*dorban*	*tábun*	*jurghan*	*jolàn*			
Moghol$_2$	*nikán //* ***jak***	*qoyōr*	*γurbōn //* ***se***	*durbōn //* ***čōr***	*tabun*	*nikán γar* *nikán* *oäda* (*oäda* = more)	*nikán γar* *qojōr* *oäda*	*nikán γar* *γurbōn* *oäda*	*nikán* *γar* *durbōn* *oäda //* ***nō***	*arbōn //* ***dū***
Moghol$_3$	*nika(n)*	*qojâr*	*γorban*	*dûrban*	*tâbun*	*jurγân*	*dâlân*			
Moghol$_4$ [72] Weiers 1972	*nikah /* *nika/n* [72]*ikά(ni)* */ niká* */ naká* *// **j'ʌk***	*qeyâr /* *qiar* [72]*q(i)yár /* *qyór(i) //* ***d'u***	*γorbån /* *qurban* [72]*qurbón //* ***s'ɛ***	*dorbån /* *durba/n* [72]*durbón* *// **čortó*** ***qurú*** 4th finger	*tåbun /* *tabun* [72]*tabán /* *iká yár //* ***p'ʌnž***	*jurγan //* *åsun /* *essun* [72]*iká yár* *iká qurú* *// **šiš***	*dålån* [72]***h'ʌft***	*arban-i* *qiar* *uškan //* *sålån* [72]***h'ʌštʌ***	*arban-i* *nikan* *uškan //* *tåsån*	*arbån ~* *arban* [72]*qyór* *γár //* ***d'a***
*pMo. f.	*niken*	*qoyi-r* *ǯuir-in*	*γur-ban*	*dör-ben*	*tawu-* *[γa]n*	*ǯirγu-γan*	*d[a]l(u)-* *γan*	*nayi-man*	*yirs-ün /* *yir-sün*	*[φ]ar-ban*

Teens in the Mongolic languages are simple compounds consisting of "10" + n (n = 1, ..., 9) – see Poppe 1955, 246.

	20	30	40	50	60	70	80	90	100	1000
WrMo.	*qorin*	*yučin*	*döčin*	*tabin*	*ǰiran*	*dalan*	*nayan*	*yiren*	*ǰayun*	*miŋγan*
MMo.	*qorin*	*qucin* [C]*qujin*	*döcin* [C]*dücin*	*tabin*	*jiran* [A]*jiren*	*dalan*	*nayan*	*yeren* [CA]*yiren*	*ja'un* [A]*ja(w)un*	*miŋan* [CA]*minγan*
Kitan									*jau*	*miŋ*
Ordos	*kori/n*	*guci/n*	*döci/n*	*tabi/n*	*jira/n*	*dala/n*	*naya/n*	*yire/n*	*juu/n*	*miŋga/n*
Khalkha	*xory* *xorin*	*guc* *gucin*	*döc* *döcin*	*tawy* *tawin*	*jar* *jaran*	*dal* *dalan*	*naya* *nayan*	*yer* *yeren*	*zuu* *zuun*	*myaŋa* *myaŋan*
Buryat	*xori/n*	*guša/n*	*düše/n*	*tabi/n*	*žara/n*	*dala/n*	*naya/n*	*yere/n*	*zuu/n*	*myaŋa/n*
Khamn.	*kori/n*	*gǔci/n*	*duci/n*	*tabi/n*	*jira/n*	*dala/n*	*naya/n*	*yere/n*	*joo/n*	*miŋga/n*
Kalmyk	*xör/n*	*γuc/n*	*döc/n*	*täw/n*	*jir/n*	*dal/n*	*nay/n*	*yir/n*	*zuu/n*	*miŋγa/n*
WrOirat	*xori(n)*	*γuči(n)*	*döči(n)*	*tabi(n)*	*ǰiran*	*dala(n)*	*naya(n)*	*yere(n)*	*zuun*	*miŋγan*
ŠYug.	*xorin*	*qucin*	*döcin*	*tawin*	*jiran*	*dalan*	*nayan ~ neyan*	*yeren*	*juun*	*miŋγan*
EYug.	*χorən*	*qudʒin*	*dørtʃîn*	*tawən*	*dʒiran*	*dalan*	*najan*	*jeren*	*dʒuun*	*mənɢan*
Monghl.	*hurin*	*hujin*	*tijin*	*tayin*	*jiran*	*dalan*	*nayan*	*yerin / yiran*	*joŋ / jaŋ*	*menhen*
Manghr.$_1$	***ershi***	***sanshi***	***sishi***	***ushi***	***liushi***	***qishi***	***bashi***	***jiushi***		
Bonan Qinghai Gansu	*xoruŋ*	*γur.araŋ* ***zem.ce***	*dir.araŋ* ***hzhiw.ce***	*taw.araŋ* ***hŋaw.ce***	*jerɣ.araŋ* ***drig.ce***	*dol.araŋ* ***hden.ce***	*nim.araŋ* ***hja.ce***	*yers.araŋ* ***rgew.ce***	*njuŋ* ***hja***	***rtuŋ*** ***can***
Santa	*khorin //* ***ershi***	***sanshi***	***sishi***	***ushi***	***liushi***	***qishi***	***bashi***	***jiushi***	***i-bai***	***i-qien***
Kangjia	*ɢuar harɔ*	*ɢurɔ harɔ*	*derɔ harɔ*	*tavun harɔ*	*dʒirʁuŋ harɔ*	*danlɔ harɔ*	*neimo harɔ*	*jasun harɔ*	*dʒun*	
Dagur	*xory* *xoriŋ*	*goc* *gociŋ*	*duc* *duciŋ*	*taby* *tabiŋ*	*jar* *jareŋ*	*dal* *daleŋ*	*nay* *nayiŋ*	*yer* *yereŋ*	*jau* *jauŋ*	*myaŋg* *myaŋgeŋ*
Moghol$_2$				***qatɛiki*** *parčɛini* *//* ***pančta***	***šišta /*** ***šäšta***	***afia*** < Pashto *avia*	***aštia***		***qatɛiki //*** ***sat***	***azōr***
Moghol$_4$ [72] Weiers 1972	*qori/n /* *qorn //* ***n.å'emah*** [72]***bist***	*qurban arban //* *γ.****å'emah***	*qiar qori* = 2 x 20 // *d.****å'emah*** [72]***č'il***	*tabun arban //* *t.****å'emah*** *//* ***katai.*** ***kin-i*** ***nispa-*** ***ini*** = 100 · $^1/_2$	*qurban qori //* *ås.****emah***	*qurban qori arban //* *dål.****emah***	*durban qori //* *sål.****emah***	*durban qori arban //* *tås.****emah*** *//* ***katai.*** ***kin-i*** ***arban.kam***	*årin //* ***katai*** */* ***qatei*** [72]*niká ikín* = 1 head // ***s'ʌd***	*aryun /* *eryå /* *nik.arbun* [72]***hʌz'ɔr***
*pMo.	*qor-ïn*	*yu[r]t-ïn*	*dört-in*	*taw-ïn*	*ǯir-an*	*dal-an*	*nay-an*	*yir-en*	*ǯayʔwun*	*miŋγan*

Note: The bold letters indicate the loans. The symbol / separates variants of one form; // separates different forms.

8.2.2. Sources of the Mongolic numerals

Bonan: Wu Hugjiltu 2003: 324–5. **Buryat:** Skribnik 2003:110. **Dagur:** Tsumagari 2003: 139; Enhebatu & Xinteke 1988: 251. **EYug = East Yughur:** Sun Hongkai 1999/N. **Kalmyk:** Bläsing 2003: 237. **Kangjia:** Sechenchogt 2002/N. **Khalkha:** Svantesson 2003: 163. **Khamn**. = **Khamnigan Mongol**: Janhunen 2003: 90. **Kitan:** Kane 2009. **Manghr**.$_1$ = **Manghuer:** Todaeva 1973: 88–9. **Manghr**.$_2$ = **Manghuer of Minhe:** Likeyu & Qingge'ertai 1988: 186. **MMo**. = **Middle Mongol:** Rybatzki 2003: 70 (only sources of the minority forms are indicated here: A Arabic script, C Chinese script, P vPḥags.pa script, SH Secret

History). **Moghol$_1$:** Leech 1828, edited by Ligeti 1955. **Moghol$_2$:** Ramstedt 1906. **Moghol$_3$:** Ligeti 1955. **Moghol$_4$:** Weiers 1972: 120–1 & 2003: 255. **Monghl. = Mongghul:** Georg 2003a: 296–7. **Ordos:** Georg 2003b: 201. **pMo**. = **proto-Mongolic**: Poppe 1955: 243–8. **Santa:** Kim 2003: 354–5. **ŠYug. = Šira Yughur:** Nugteren 2003: 271. **WrMo. = Written Mongol:** Sárközi 2004: 31–2. **WrOirat = Written Oirat:** Jaxontova 1996: 61.

8.2.3. Comparative-etymological analysis of the Mongolic numerals

18. If the protoform of the Mongolic numeral "1" was **ni-ken*, it was probably extended by the same (diminutive?) suffix as WrMo. *učüken* "little, few" or MMo. *ke'üken* "child" vs. *ke'ün* "son" (Poppe 1955, 239). Analogically in some Tungusic languages the numeral **ämün* "1" has been extended by the diminutive suffix **-kān* / **-kā̄n*, e.g. Evenki *emūkēn* vs. *emūn* "1" etc. (Benzing 1955, 58–89; *TMS* II, 270). Alternatively, the protoform **ni-gen* should also be taken in account.

Internal etymology:

18.1. Ramstedt (1907, 4; 1957b, 65) derived **ni-* from the root attested in WrMo. adj./adv. *nei* "one and all; all together; in accord, jointly; all at once; accord", *neite* "all, everything; common; together; in general; commonly; society, community", *neigen* "equal(ly), uniform(ly); same, alike", *neile-* "to unite, join, connect; gather together" (Lessing 1960, 569–71; Vladimircov 1929, 286), MMo. (1389) *neyide* "ensemble, en commun" (Lewicki), Kalmyk *nī* "unity, agreement, harmony", *nīkn̥* "equal" (Ramstedt 1935, 277) etc.

Note$_1$: It would be tempting to add Kitan *nai* "first; head, chief, official" (Kane 2009, 182, 189, 198, 201–205; Starikov 1982, 149). But Doerfer (1992, 48) connected it with MMo. *naį* "sehr" (Haenisch 1939, 113).

Possible Altaic parallels: Mo. + Tg. **neje-* "even, similar" + OJp. *ni-* "to resemble" (*EDAL* 966–67).

External relatives: The closest extra-Mongolic parallel appears surprisingly in Nivkh **ńi* "1" (Panfilov 1973, 9).

18.2. In *EDAL* 990 Mo. **nige(n)* "1" is compared with Tk. **jaŋıř* "lonely, single"; Tg.: Oroč *noŋon*, Negidal *nonon* "at first", from the verb in Even *non-*, Manchu *nene-* "to be the first", Evenki *nono-* "to begin"; MKor. *njànì* "other, different"; OJp. *namyi* "only", all from pAlt. **nį̆ŏŋe* "one, single".

Note$_2$: Ramstedt (1907, 5) noticed that formally comparable Turkic forms like Kara-Kirgiz *jekä* "alone, sole" and Čaghatai *jäk* "one", *jäkä* "alone" represent borrowings from Modern Persian *yak* "one" (Räsänen 1969, 195).

19. With regard to numerous probable or at least hypothetical derivatives/relatives, it is difficult to reconstruct the Common Mongolic protoforms for the numerals "2" and "20".

Internal etymology:

19.1. Ramstedt (1907, 5–6) reconstructed Mo. **qoyir* on the basis of *qoyirγu* "zweifelnd, unentschieden", apparently with regard to German *Zweifel* "doubt" < Germanic **twīfla-*, originally "double" (but Lessing 1960, 954: "tardy, retarded; laggard; lazy, slow"), cf. also *qoyiγ ~ quyiγ* "peninsula" (Lessing 1960, 954: *xoig*, Khalkha *xojg*), seeing in the final *-r* a suffix comparable with *-r*, which Ramstedt identified in *küčü* "power, force, strength" vs. *küčir* "hard, heavy" or *möči* "limbs" vs. *möčir* "twig, branch" (Lessing 1960, 495–96, 544–45). The stem **qoyi-* should have been compared with WrMo., MMo. *qoyina* "in the rear, back; after(wards), behind" (Poppe 1955, 79), *qoyitu* "back, rear, hind; north" (Lessing 1960, 955: *xoina* vs. *xoitu*), starting from the opposition illustrated in Tg. **ämün* "1" vs. Mo. **qoyir* "2" = Mo. *emüne* "in front, before" vs. Mo. *qoyina* "after, behind".

Note: Starikov (1982, 125) read the Kitan gloss "2" as *χə*, *χo*, but Kane (2009, 50) prefers the reading <*jůr*>, <*c.ur*>, discussed in §20.

Possible Altaic cognates:

19.1.1. Miller (1996, 116) tried to find a cognate to Mo. "2" in the Korean word *kai* used in the so-called 'Four-stick' game in the meaning "2". Cf. <https://en.wikipedia.org/wiki/Yut>.

19.1.2. The authors of *EDAL* (p. 563) reconstruct Mo. **gojar* and compare it with Tg. **goj / *gia* "other" > Evenki *gə̂*, Even *gə̄*, Negidal *gə̂*, Manchu *Guwa*, Ulča *Gə̂-Gda* "single"; *Goj* "other, Orok *Gə̂-da* "one, single"; *Goị* "other, Nanai *Gịa-Gda* "single"; *Goj* "other", Udihe *geä*, Solon *gə̃* "other" (*TMS* I, 144, 157–58); OJp. *kye*, MJp. *ké* "different, other" (*EDAL* 563: Northern dialects reflect **k-*, due to contamination with **koji-* "to be behind, follow" or with **korin* "20" (it means, in their perspective "20" should be separated from "2" – see *EDAL* 824). But the southern forms with the voiced anlaut, Šary-Yughur *γuur*, East Yughur *ɢuur*, Mongghul *γoor(i)*, Manghuer *γor*, Bonan *γwar*, Santa *γua*, Kangia *ɢua*, are easily explainable from influence of the following numeral "3").

External relations: The only promising extra-Altaic parallels appear in Yukaghir **kuj-*/**kij-* (**küj-*?) "2", cf. Čuvan *kuyen*, *kuyun* "2" & *imoxanbo kiyon* "7" (Boensing), North Yukaghir **kij-* "2" etc. (Tailleur 1962, 70), and perhaps in FU **koj-m*[*on*]*Vś* "20" (*UEW* 224–225), where the second component associated with the meaning "10" implies the meaning "2" for the component **koj-*.

19.2. Vladimircov (1929, 276) reconstructed the base **qowï-*, referring to WrMo. *qobu-sun* "two-years-old boar; double nature of a shaman; werewolf" (Lessing 1960, 950) < **qowu-* and Oirat (Bayit) *xöĭ-mstə̄* "two-years-old" < **qoyï-* < **qowï-*. Vladimircov's reconstruction **qowï-* is compatible with WrMo. *qubi* "part, portion, share", *qubiya-* "to divide, partition; share, distribute equally", *qubil-* "to change the appearance, take another shape" (Poppe 1955, 32; Lessing 1960, 976–77).

19.2.1. Possible Altaic cognates: Tg. **xöbü-* “part” (*TMS* I, 403).

20. There is another, probably primary, numeral “2” in Mongolic. It is attested in the following forms and their derivatives, with *-r-* (a, b, c), and without *-r-* (d, e, f, g):

(a) MMo. [Secret History] *ǯirin*, WrMo. *ǯiren* (Lessing 1960, 1060), Khalkha *ǯirin* “2 (about women & females)” < pMo. **ǯiwrin* ~ **ǯuirin* (*EDAL* 1374);

(b) Monguor *ǯ̌ür*, Dagur *ǯūr*(*ū*) “pair” < **ǯirü*(*gü*), if these forms are not borrowed from Solon *ǯūr* “2” (see Todaeva 1986, 145);

(c) WrMo. *ǰirmüsün* “pregnant”, Khalkha *ǯiremsen*, Buryat *žermehe(n)*, Kalmyk *ǯirəmsn̦*, Ordos *ǯirmesen* id. (Ramstedt 1935, 113; Lessing 1960, 1060);

(d) ?WrMo. *dabqur* “double, twofold, twice, in pairs; pregnant; row, layer” (Lessing 1960, 214), maybe from **dubqar*;

(e) WrMo *ǰiči* “again” vs. *ǰiči* “great-grandson” = “descendant of the second generation” – cf. *γuči* and *döči* for the third or fourth generation of descendants respectively (Kotwicz 1962, 138–139);

(f) Ordos *dž̌öwō̱r* “one of two” < Mo. **ǯöbeger* (Ramstedt 1957, 65);

(g) WrMo *ǰitüger* “the second wife in a bigamous family” vs. *ǰitüge(n)* “jealousy, hate” (Lessing 1960, 1064) (see Poppe 1955, 243–244; Ramstedt 1957, 65; Poppe 1960, 28).

Possible Altaic cognates:

Ramstedt (1957b, 65) compared the Mongolic numeral “2” (f.) with Tg. **ǯöwä*(*-r*) “2” (*TMS* I, 276–77; *EDAL* 1374: **ǯube-*). Martin (1966, 245) added MKor. *turh* “2” and perhaps OJp. *ture* “companion”. Ramstedt (1949, 275) also thought about a Turkic cognate in Karakhanid (Mahmud al-Kašghari) *tükä* “a calf in the second year”.

But there are at least comparably promising cognates in Turkic:

(α) Old Bulgar *tvirem* “second”, Čuvaš *tebər*, *tebərew* id. (*EDAL* 1374: pTk. **TVbVr-*; Čuvaš *-b-* is explained as secondary, on analogy with *pəʷrem* “first”).

(β) Teleut *tüŋ* “pair; similar”, Lebed *tügäj*, Baraba *tṻäj* “paarig” (Räsänen 1969, 505). The final suffix *-gäj* perhaps corresponds to OTk. *-gä* in *özgä* “other, for himself” : *öz* “himself” (Ramstedt 1957b, 185).

(γ) Tk. **düř* > Uyghur *tüz* “gleich, gleichmässig, eben, vollkommen”, Turkmen *düz* “eben, glatt, gerade”, Čuvaš *tür* “eben” etc. (Räsänen 1969, 508; Dybo 1991, 59; Mudrak 1993, 68; Budagov apud Sevortjan II, 310 also recorded the meaning “even {number}; but Starostin 1991, 13 compared Tk. **düř* with MKor. *čìrì-tá* “to keep straight on”, reconstructing pAlt **č-*). The quoted forms can be projected back to pAlt. **töwi* or **tüwi* “2; pair”. The further development could have been approximately as follows: **töwi* > pre-Mo-Tg. **döwi* > **diöwi*(*-är*) > Tg. **ǯöwär* and Mo. **ǯi*(*w*)*ir-* besides **ǯöwe-* > **ǰöbe-*(*ger*) (see the rule 7). Starostin (1991, 33) reconstructed pAlt. **diüwV* “2”. Let us repeat the set of correspondences among dentals postulated by him (1991, 21):

	Rule	pAlt. >	Tk.	Mo.	Tg.	Kor.
	6.	*t‘-	*t-	*t-	*t-	t-
		*t‘i-	*ti-	*či-	*čị-	
	7.	*t-	*d-	*d-	*d-	t-
		*ti-	*di-	*či-	*ǯị-	
	8.	*d-	*j-	*d-	*d-	t-
		*di-	*ji-	*ǯi-	*ǯị-	
cf.	also 18.	*č-	*d-	*d-	*ǯ-	č-
		*či-	*di-	*ǯi-	*ǯị-	

Mo. & Tg. *ǯ- and Kor. *t-* imply Tk. *j- (= *ǯ- according to Mudrak; series 8). The only candidate could be the Tk numeral “7”, traditionally reconstructed *jätti*, accepting the semantic motivation “the second (after five)” (see Hamp’s analysis of Tk. “70”). Tk. *d- , Tg. *ǯ- and Kor. *t-* imply Mo. *či- according to Starostin, but there is Mo. *ǯirin “2” (but the parallel series 18 implies Mo. *ǯi- also in the series 7). The main argument for the palatalized series (7) is based on the problematic etymon “stone”: Tk. *d/tāĺ = *tiāł (Mudrak) = *ṭialị̣a (Doerfer) // Mo. *čilaγun // Tg. *ǯola // MKor. *tōrh* (Starostin 1991, 119). The external parallels (Kartvelian *ṭal- “flintstone” – see Illič-Svityč 1967, 343) confirm the originality of pAlt. *t‘- > Mo. *t-/*či-, but not Tg. *d-/*ǯị-. The Mo. > Tg. borrowing proposed by Poppe (1960, 77) looks like a plausible explanation. An alternative possibility is represented by the solution separating Tg. *ǯola “stone” (& *ǯal-, *TMS* I, 247) from the other Altaic denotations of “stone”, and by finding a promising cognate in Tk.: Turkish (dial.), Koibalsan *jalym* “rock”, Turkish (dial.) *yalın* “stone, high rock; bare”, Osman *jalman* “the summit of the mountain resembling an edge” (Sevortjan IV, 103), indicating an original pAlt. *ǯ-. On the other hand, the external cognate for the numeral “2” reflected in IE *$dụo$-H_1 (Illič-Svityč l.c. 338, accepted even by Starostin 1991, 33) implies pAlt. *t- and not *d-, reconstructed by Starostin. On the basis of these arguments the palatalized series 7 should be modified as follows: Alt. *ti- > Tk. *di- // Mo. *ǯi- // Tg. *ǯị-.

21. Mo. *γur-ban “3” and its derivatives lead to the root *gu(r)-.

(i) Forms with -r-:

WrMo. *γurbamusun & γurmusun* “triple, three times, thrice” (Lessing 1960, 369–70), Kalmyk *ġurm̥sn̥* “dreifädiges Seil” < *γurmasun* etc. (Ramstedt 1907, 8);

Kalmyk *ġuŕū̄* “drei Finger breit” < Mo. *γuriγu* (Ramstedt 1935, 155).

(ii) Forms without -r-:

Mo. *γut-ïn “30”;

WrMo. *γu-taγar* “3rd” (Lessing 1960, 370);

WrMo. *γunan* “three-year-old; third day of a month” (Lessing 1960, 368);

Mo. *ǯir-γu--γan “6” = “2 x 3”.

21.1. Internal etymology: Cf. WrMo *γaur*, *γur* “Handwurzel, Handgelenk, Unterarm” (Ramstedt 1935, 157), if the semantic motivation might be based on three joints of the arm: wrist, elbow, shoulder?).

Possible Altaic cognates:

21.2. Miller (1971, 236–237) saw in OJp. *kökönö* “9” a multiplication “3 x 3”, isolating here the root **kö* *”3”, cf. Mo. **ǯir-γu--γan* “6” = “2x3”. He also added Kor. *ilkop* “7”, analyzing it as *yər* “10” – **γu* “3” – *əp*(*s*) “be nonexistent”, i.e. “7” = “10–3” (1971, 244).

21.3. Later he finds a more convincing cognate of Mo. *γur(-ban)* “3” in NKor. *kŏl* meaning “3” in the so-called ‘Four-stick’ game (Miller 1996, 116). Cf. <https://en.wikipedia.org/wiki/Yut>.

External relatives: There is a promising external cognate in Fenno-Ugric **kurmi* “3” (*UEW* 174; Sammallahti 1988, 543), continuing in Hungarian *három*, pMansi **kuurem*, while **-l-* in Fenno-Permic **kolmi* and pKhanty **käälem* is explainable by the influence of the following numeral **ńeljä* “4” (Collinder 1965, 145). The bare root **kur-* is probably extended by the **-m*-suffix of abstract nouns, i.e. **kurmi* = “Dreiheit”. The old comparison of the FU “3” with Samoyed **näkur* “3” (Helimski 1987, 77; Janhunen 1977, 99 reconstructs **näkə̑jr*) proposed by Castrén (1854, 194) is in principle also possible. The segmentation **nä-kur* allows one to connect both FU **kur-* and Samoyed **-kur.* The component **nä-* can be identified with the element **nä-*forming some postpositions, e.g. **näŋ* “zu” (dat. sg.), **nänå* “bei” (loc. sg.), **nätə̑* “von” (abl. sg.), **nänmə̑nå* (pros. sg.) (Janhunen 1977, 99).

Bouda (1952, 25–26) compared FU “3” with Čukči-Koryak **kurym* > Čukči *krym-qor,* Koryak *kyjym-qoj* “dreijähriges weibliches Rentier”, cf. *qora* & *qoja* “Rentier” (cf. Mo. *γunan* “three years old”).

Note: It remains to explain the final component *-ban.* The suggestive parallel *-ben* in Mo. *dör-ben* indicates their common origin. Hamp (1970, 194) tried to identify the doublet *-ban*/*-ben* with the reflexive-possessive suffix attested in WrMo. *-ban*/*-ben* after final vowels and *-iyan* / *-iyen* after final consonants (Poppe 1955, 233). Etymologically, the Mongolic reflexive suffix is probably related to Tg. **mēn* “(one)self”, MKor. *móm* “body; person; self” and perhaps OJp. *m(w)ono* “thing, method, being” (Ramstedt 1949, 151; Poppe 1955, 231; *TMS* I, 568; Starostin 1991, 280 reconstructed pAlt. **māni*, in *EDAL* 911–12 the protoform **mə̀nò* “self, body” is proposed). The original sense of the Mongolic suffix could be “person”. But the distributive differentiation depending on the termination in vowel or consonant is just opposite than in the case of the analyzed numerals. Ramstedt (1907, 8) reconstructed pMo. **γur-man* “3” *& *dör-men* “4” besides the really attested *nayiman* “8”. Later he connected this suffix with Kor. *măn* “hand”, *mandi–* “fingern, mit Händen betasten” (Ramstedt 1982, 106). Perhaps a more promising candidate could be Kor. *mānh-*, MKor. *mān-hă-* “to be many”, *hă-* “to be” (Miyake),

compared by Ramstedt (1982, 105) with the NTg. suffix **-mān* forming multiplicative numerals (Benzing 1955, 106). Finally there are also promising examples in Mongolic proper, which could form the suffix **-man/*-men*, namely Santa (Dungsiang) *man* "all" (Todaeva 1961, 128), Dagur *mani* "group" (Martin 1966, 249). The hypothetical collective function of the suffix has an analogy in the Old Japanese numerative *-tu*, which is compared with Nanai *-to*/*-tu*: *ilan-to* "all 3", *duyin-tu* "all 4" etc. (Avrorin 1959, 237; Menges 1975, 92).

22. Mo **dör-ben* "4" is extended by the same suffix as the numeral "3". The bare root **dör-* is also attested in **dörtïn* "40" (the expected *-r-* is still preserved in East Yughur *dørtʃin*), and Kalmyk *dörū̄* "vier Finger breit; четверть", reflecting **dörigü* (similarly *ɢuŕū̄* "drei Finger breit" < **ɣuriɣu* – see Ramstedt 1907, 7; 1935, 99, 155), which is terminated by a suffix comparable with OTk. *törtägü* "four together" (Clauson 1959, 29; Kononov 1980, 114). There are also related forms without *-r-*: WrMo. *dö-töger* "4th", *dönen* "four-year-old animal" and probably *debger* "four-edged, quadrate" (Golstunskij) vs. *tebger* (Kowalewskij) in spite of the skepsis of Ramstedt (1907, 7).

22.1. Probable Altaic cognates: Tk. **dȭrt* (Dybo) // Tg. **dujgin* // pJp. **də-* "4", see Tk "4" discussed above. Miller (1996, 116) added EMKor. *towi* recorded in the Japanese syllabic script, but it was probably only a mistaken record of **nowi* (see # 46).

22.2. Internal Altaic etymology: The root **dör-* may be connected with Kalmyk *dörö* "Treppe, Erhöhung" < **döre* and Evenki *dörā̄* "Hügel" (missing in *TMS*; quoted after Ramstedt 1935, 99). The primary meaning could be extrapolated from *"knuckles [of a hand] together" > "four". This conclusion agrees very well with Turkic data, where Čuvaš *türt* "Rücken" in the idiom *ală türt-ĕšĕ* "Handrücken" (Egorov 1964, 266; Doerfer 1971, 338) suggests a very similar primary semantic motivation.

23. The root proper of the Mongolic numeral "5", also with regard to Kitan *taw* (Starikov 1982, 148; Doerfer 1992, 49; Kane 2009, 179, 194), is **taw[u]-*. Besides the cardinal form reconstructible as **tawu-[ɣa]n*, there are also **tawïn* "50", the ordinal, preserved in WrMo. *tab-taɣar*, *tab-tuɣar* "5th", and *tuulan* "five-year-old" < **tawlan* (Vladimircov 1929, 259).

Possible Altaic cognates:

23.1. Tg. **tuaŋ̀ŋia* "5" // MKor. *tàsăs* // Koguryŏ *utu* // pJp. **ìtù-* "5", cf. also Old Danube Bulgar *ехтемъ* "5th", indicating **etə* "5" (Mudrak 2005, 101), and the puzzling Čaghatai *ittik* "50" discussed above (Turkic "50") – see Starostin (1991, 70), reconstructing pAlt. **t'a*(*u*), while Vovin (1994, 106) proposed pAlt. **it^{h}V*.

23.2. Ramstedt (1907, 12) connected the Mongolic numeral "5" with WrMo. *tabaɣ* "sole (of the foot)" // Tk. **tāpan* id. (cf. Räsänen 1969, 462; Starostin 1991, 118f reconstructed Tk. **d-* and assumed Mo. *tabaɣ* < Tk. dim. **dāpān-ak*) and also Teleut

tabaš, Baraba Tatar *tabac* “Handfläche, hohle Hand”. Miller (1971, 233) added Jp. *taba* “handful, bunch”.

23.3. WrMo. *taba* “sufficiency” (Hamp 1970, 193).

23.4. OJp. *töwo* “10” (Ozawa apud Miller 1971, 233).

External relations:

23.5. There is again a very suggestive parallel in Nivkh *t‘o* “5” (Panfilov 1973, 9).

24. Mo. **ǯirγu-γan* “6”.

Internal etymology:

24.1. Already Schott (1853, 11), followed by Ramstedt (1907, 13–14) and Miller (1971, 221, 237, 240), thought about the internal structure based on multiplication of **ǯir-* & **γu[r-]* “2 x 3”.

Proposed Altaic comparanda:

24.2. The comparison of Mo. “6” with Tg. **ńiŋgun* “6” (Poppe) (see Ramstedt l.c.; Poppe 1960, 28, 88, 130; Miller 1971, 240) should be rejected. The correspondence of Mo. **ǯi-*// Tg. **ńi-* , based esp. on the comparison of WrMo. *ǯiru-* “to draw” // Tg. **ńiru-* “id., to paint” (Poppe 1960, 28), is not valid. Starostin (1991, 117f, fn. 7) separated two different roots here:

(i) Tk. **dir-ŋa-* “to scratch” // Mo. *ǯiru-* “to draw” // Tg. *ǯur*(*ū*)- “to scratch”;

(ii) Tk. **jař-* “to write” // Tg. **ńiru-* “to draw, paint” // MKor. *niru-, nir-k-* “to read”.

25. Mo **dol*(*u*)*-γan* “7” has no unambiguous etymology. Janhunen (1993, 181) thinks that the presence of **-u-* before the suffix might well be due to the rhythmic analogy of the numeral “6”. There are no traces of this vowel in Jurchen *dalhûn* “17” (Janhunen l.c.).

Internal etymology:

25.1. Ramstedt (1907, 14) connected the numeral with WrMo. *doluγaburi / dolijaburi quruγu* (*doluγubur* by Golstunskij) “forefinger”, Khalkha *dolōwɒr* id., and the Mongolic borrowing in Koibalsan *tolamer* “ring-finger” (< **dolāwur*), identifying here the deverbal suffix *-buri*, extending the verb *doluγa-/dolija-* “to lick”. He saw an analogy in Turkic “7”, deriving it from the verb “to eat” (see above). The semantic motivation “forefinger” = *”lickfinger” or *”eatfinger” is really known, cf. Greek λιχανός, Lithuanian *ližius* or Shilha of Tazerwalt *mällaγ*, all “forefinger” = lit. “lick-finger” – see Blažek 1998a, 156.

25.2. An alternative solution can be a derivation from pAlt. **čā́lo* “full” > Tk. **dōlɨ* “full” : **dōl-* “to fill” // Tg. **ǯalu-*(*m*) : **ǯalu-*(*p-*) id. // MKor. *čăra-* “to be full, sufficient” // OJp *tar-* id. (Starostin 1991, 45, 129, fn. 89; Martin 1966, 243). The ex-

pected cognate in Mongolic would look like ****dolu-* or ****dalu-*, but in Mongolic there is really attested WrMo, MMo. *delger* "full, abundant, wide", WrMo. *delegei*, MMo. *delegai* "wide, broad" (*EDAL* 390–91). This point of view agrees with Hartmann (1900, 155), who proposed that a parallel development could be assumed for Tk. **jet-di* "7", deriving it from **jet-* "erreichen, genug sein", cf. e.g. Turkish dial. *yetiz* "all, whole, full" (Räsänen 1969, 199; Sevortjan IV, 193–94).

26. Mo. **nay(i)-man* "8" represents a serious puzzle among Mongolic numerals. Ramstedt (1907, 17–18) was probably right, identifying the suffix **-man* with the termination **-ban/*-ben* of the numerals "3", "4". The only evident external cognates appear in Manchu *niomere* "octopus", Udihe *ńumie* id. (*TMS* I, 645), which could, however, have been borrowed from some Mongolic source (as a semantic parallel Janhunen 1993, 178 quoted WrMo. *naimaljin* "[eight-legged] crab").

Internal etymology: It is possible to see here a compound consisting of the first component, attested in MMo. (1389) *naị̂* "au plus haut degré, très" (Lewicki 1959, 62) = (Secret History) elative adverb *nai* "sehr" (Haenisch 1939, 113), Kitan *nai* "head, chief" (Kane 2009, 189) = *"top", and the second component, preserved in Santa (Dongxiang) *man* "all" (Todaeva 1961, 128), Dagur *mani* "group" (Martin 1966, 249), with promising cognates in Tg. **mani* "crowd, flock, herd" (*TMS* I, 526); Čuvaš *мъʷпъʷ* "big, large"; MKor. *mān-hǎ-* "to be many"; OJp. *mane-* "many, numerous" (*EDAL* 901), together perhaps "big(gest) amount"?

Proposed Altaic etymologies:

26.1. The reconstruction **nayN-ban* of Hamp (1970, 193; Janhunen 1993, 177 proposed **nai-pa*/*n*) opens a possibility to connect the root **nayN-* with Tg. **ńān* "again, once more" (*TMS* I, 633), Tk. **jana*//**jene* "again", usually derived from **jan-* "to turn back" (Sevortjan IV, 115), and perhaps with Kor. *nai-nai* "again and again" (Ramstedt 1949, 159), MKor. *nă'oi* "again; better" (*EDAL* 860). Hence "8" = "once more [four]"? Without parallel semantic models this solution is very artificial.

26.2. There is also in play a hypothetical relationship of Mo. **nay*(*i*)*-man* "8" with MKor. *:neyh* "4" < **nerki*, which implies an original meaning "4 x 2" for the Mongolic numeral. Two alternative interpretations allow us to explain the first component:

26.2.1. The root is **nayiR* (*R* = *l/r*), with a regular plural **nayin* (cf. Poppe 1955, 175), extended **nayin*, plus the grammaticalized second component **man* "all" or "group" > **nayiman.* With regard to the fact that Mongolic **-yi-* is derivable from **-gi-* (cf. Mo. **dayin* "war" vs. Tk. **jagı* "war, enemy" or Mo. **dayira* vs. **dayari* "withers, abrasion" – see *EDAL* 72, 457), the root of the Mongolic numeral "8" is reconstructible as ****nagiR-*, directly compatible with pKor. **nerki* "4".

26.2.2. The root is **nayiR*, with a regular plural **nayid* (cf. Poppe 1955, 179), extended **nayid*, plus **man* > **nayiman*. This second alternative opens a possibility to deduce pAlt. **ńVl-* *"4", directly attested in Korean (#46), indirectly in Mongolic "8" = plural of "4", and Tungusic "6" = "4 [subtracted from 10]" (#35.5).

26.3. Miller (1975b, 148) proposed the following, rather improbable, development: Tg. **ʒär-män* "2 [subtracted from] 10" > pre-Mo. **när-män* > Mo. **najman*, while earlier he saw here an isolated innovation within Mongolic (Miller 1971, 233),

External relations: Nivkh *nu-*, *ny-* "4" & *minr* "8"; FU **ńeljä* "4" & Ugric **ńalV* "8" (*UEW* 315–316; 875); Dravidian **nāl* "4" (Tyler 1968, 807).

Hypothetical substratum: There is Nivkh *minr* "8" with a transparent internal structure, cf. *mV-* "2" and *nu*(*r*) "4", but the comparison with Mongolic "8" would presuppose a metathesis ***nimr* (cf. Manchu *niomere* "octopus"?!) and a following substitution of the final **-r* > **-n*. On the other hand, Nivkh (Amur) *ńyńben* "9" (= *"one subtracted from [ten]"; cf. *ńV-* "1") resembles Mongolic "8" much more suggestively. The semantic difference remains unexplained. Perhaps, accepting the original semantics for "9" = "the greatest [number]" (see below), it is plausible to reconstruct the primary meaning *"one subtracted from the **unit**".

27. Poppe (1955, 246) reconstructed CoMo. **yersün* "9", but with respect to Kitan *is* (Chinggeltei apud Starikov 1982, 151 and Kane 2009, 180: *is(u)*) ~ *yisə* (Doerfer 1992, 49) "9" and CoMo. **yiren* "90", the protoform **yirsün* should also be taken in account (cf. Hamp 1970, 195, reconstructing **yir*(*s*)-).

Morphological interpretation:

27.1. Pritsak (1954, 245) judged that the suffixes **-sün* and **-en* indicated singular and plural respectively.

27.2. Miller (1971, 237) preferred the distinction: sg. **yis-* vs. pl.-du. **yir-*, but *-r-* is preserved in Bonan *yersuŋ* "9".

27.3. Abstracting from the preceding attempts, the numeral "9" can be segmented as **yir-sün* or **yer-sün.* It offers to identify the nominal suffix **-sun* / **-sün* in the latter part. It remains to determine the function of the root proper. If we accept the connection of the root **yir-*/**yer-* with WrMo. *yerü* "the most of", *yerüdügen* "for the greatest part, generally", *yerüŋkei* "common", the original meaning could be "the greatest [number]". According to Ramstedt (1907, 18), the number "9" was understood as a special unit among Mongols. It was already Gombocz (1912[1913], 11–12) who compared Mo. "9"/"90" with Tk. **jŭ̄ř* "100", perhaps reduced from **jŭ̄ř-ōn* "the biggest ten" (cf. Ramstedt 1907, 19). The other possible cognates are Manchu *ǯiri*, *ǯirun* "a very big number"; MKor. *jàrə́h* "a big quantity, number" (Starostin); OJp. *joro-du*, MJp. *jòrò-du* "10.000" (Ramstedt 1982, 62; Syromjatnikov 1981, 73; *EDAL* 1545: **ǯ[i̯ō]ŕo*).

27.4. Another possibility can be **yir-/*yer-* as a counterpart of MKor. *jə́r* "10" (Starostin) = *'yərh* (Lee). In this case it is necessary to explain the difference between "9" and "10", which is "one". If there are any traces of a unit in **yersün*, its structure would be understandable. In the Altaic perspective there is really a promising candidate, namely Manchu *soṅo*, *sonixon* "single, odd"; OJp. *sane* "completely, definitely"; Tk. **siŋar* "one of a pair, one of two sides". In Mongolic a cognate may be recognized in the derivative WrMo. *sonduɣai* "odd", Khalkha *sondgoj* (Lessing 1960, 726; *EDAL* 1280: pAlt. **sɟóna*). In *sonduɣai* it is possible to determine the suffix *-du-*, forming denominal nouns as *amidu* "living" or *emünedü* "southern" vs. *emüne* "in front" (Poppe 1955, 196), and the suffix *-ɣai*, forming both deverbal and denominal nouns (Ramstedt 1957b, 184), e.g. *soluɣai* "left side or hand, left-handed" vs. Middle Turkic *sōl*, Turkmen *sōl* "left", Čaghatai *sol* "left" (Räsänen 1969, 426–27). The bare root could be **son* with the meaning "single". The compound **yer- & son- > *yersön* would mean "ten {minus} single". When the latter component lost its independent function, it was probably reinterpreted as the nominal suffix **-sün*. There is a transparent parallel formation in South Yukaghir *kunailin irket oile* "9", lit. "ten one not being", cf. *irkei* "1", *kunaileoi* "10" (von Maydell apud Schiefner 1872, 94).

28. Mo. **φarban* "10"

Internal etymology:

28.1. Ramstedt's attempt to connect it with WrMo. *arba-* "sich spritzen", Kalmyk *arwā-* "sich aufrecht stellen, sich in allen Richtungen strecken (Finger, Zweige), sich sträuben (Haar, Blätter)" (Ramstedt 1907, 21), is doubtful semantically and also phonetically. Poppe (1960, 87) compared Mo. *arba-* with Manchu *arbun* "Gebärde" and Evenki *arpul-* "winken", thus excluding the expected correspondence of pMo. **φ-* ~ Manchu *f- &* Evenki *h-*. Ramstedt (1907, 9) also quoted Moghol *arbōn* "10; mehrere, viele; einige", but it represents more probably a contamination of the numeral "10" and Wr & MMo. *arbin* "reichlich", which lacks any traces of *h-* in Middle Mongol or Evenki (cf. *albigū-* "vergrössern", see Poppe 1960, 87). Miyake (p.c.) adds the Jurchen suffix *-hun/-hûn* for "-teen" (Janhunen), which may be a reduced form of "ten" borrowed from Kitan or another Para-Mongolic language.

28.2. In *EDAL* 1191 the Mongolic numeral "10" is reconstructed and segmented as **ha-rban*. This virtual root is compared with Tg. **poba* > Orok *pōwo* "a bundle of ten squirrels", Nanai *poã* "collection, gathering"; Tk. **ōn* "10"; OJp. *-p(w)o* in designations of hundreds.

28.3. From the point of view of phonetics and semantics a more plausible relative could be identified in MMo. [Secret History] *har*, WrMo. *ar* "muster, ornament, figures; lines of the palm of the hand" (Ramstedt 1949, 185; Lessing 1960, 47), Kalmyk *ar* "line", *ara-* "to sign, write"; concerning semantics, maybe comparable is Tg. **oṅa*

"picture, ornament" (*TMS* II, 20) vs. Tk. **ōn* "10" (# 10). The final *-ban* apparently corresponds to *-ban/-ben* in the numerals "3", "4", and probably *-man* forming "8".

29. Mo. **ǯaγ/wun* "100" (& Kitan *ǰau*) has its most convincing cognate in Tg. **ǯuwan* "10" (Ramstedt 1907, 22; Id. 1957b, 67; *TMS* I, 248). Concerning the correspondence in vocalism, cf. e.g. WrMo *daγu-s-*, MMo. *da'us-* "to finish" vs. Tg. **duwē* "end" (*TMS* I, 218); MKor. *tūi* (*tūih-*) "behind, back; North"; OJp. *tupyi* "end, finish" (Ramstedt 1949, 275–76; Starostin 1991, 71; *EDAL* 1381: **túbù ~ *tobù*). The semantic difference "10" vs. "100" is discussed in §61.

Note: Miller (1971, 84) and Starostin (1991, 125) compared Tg. **ǯuwan* with OJp. *töwo* "10" (cf. also *EDAL* 398: **čị̂obe ~ *tị̂obe*).

29.1. Ramstedt (1949, 77) connected Tungusic **ǯuwan* "10" with Manchu *ǯuwan-* "to open the mouth, come loose", supposing an original meaning *"open [hand]". But the original meaning of this Tungusic verb was "to yawn" (*TMS* I, 281).

29.2. The other etymological attempts of Ramstedt are also problematic: Kor. *čjuŋ* "all (of number)" (Ramstedt 1982, 42 compared it with WrMo. *čöm* "all", but cf. Tg. **čuŋnu* "all, entirely", *TMS* II, 415) or Kor. *čoi* "all, altogether, entirely" (Ramstedt 1982, 38 compared it with Oroč *čupali* and Mo. *čo(γu)* "all", but they are not apparently compatible with Tg. **ǯuwan* "10" and Mo. **ǯaγun* "100").

29.3. In *EDAL* 1004 Mo. **ǯaγun* "100" is compared with Tg. **ńamā* "100"; Old Japanese *mwomwo*, Ryukyu *momo* id., and O+MTk. *jom-γɨ* "big number, quantity, OTk. *jom-ɨt-* "to assemble". Already Starostin (1991, 125) reconstructed pAlt. **ń[ua]mV*, but without Mongolic data. In *EDAL* 1004 the reconstruction **ńə̀mò* is proposed.

8.2.4. Comments on the Mongolic numerals

The system of the Mongolic numerals is consistently decimal, with exception of Moghol, where the system was remodelled to the vigesimal system under the influence of Pašto. It is possible to recognize recent influences from three languages of the important civilizations:

A. Chinese influence: Numerals over "10" in Santa/Dongxiang. Tens "20"-"90" in Mangghuer of Minhe around 1970; "1"-"10" later.

B. Tibetan influence: Numerals "30"-"100", "1000" in Bonan of Qinghai.

C. Iranian influence: In Moghol three sets of numerals alternate, recent Persian borrowings, archaic and rare inherited Mongolic forms and rather enigmatic innovations, influenced by Pašto.

8.3. Tungusic numerals

8.3.1. Survey of forms of the Tungusic numerals

	1	2	3	4	5	6	7	8	9	10
Even$_1$	*əmun*	*ʒūr*	*elan*	*digən*	*tunŋan*	*ŋuŋən*	*nadan*	*ʒapkan*	*ujūn*	*mēn*
Even$_3$	*omun*	*dzur*	*ilan*	*dagan*	*toŋan*	*nuigun*	*nadan*	*dziabkan*	*jigin*	*dzian*
Even$_4$	*umín*	*ǯur*	*ilán*	*dïgín*	*toŋán*	*njuŋún*	*nadán*	*ǯapkun*	*ujún*	*men*
Even$_5$	*omun*	*dijur*	*ilelan*	*dixin*	*tuŋan*	*yuŋen*	*nadan*	*digkabkan*	*užul*	*mian*
Evenki$_1$	*umən*	*ʒūr*	*ılan*	*digin*	*tunŋa*	*ŋuŋun*	*nadan*	*ʒapkun*	*jəgin*	*ʒān*
Evenki$_2$	*umūn umukān*	*ʒūr*	*jilan*	*dïgin*	*tunŋa*	*ńuŋun*	*nadan*	*ʒapkun*	*jegin*	*ʒān*
Evenki$_3$	*ommukon*	*djur*	*illen*	*díggin*	*tönŋjá*	*njuŋun*	*náddan*	*ǯápkun*	*jöggin*	*ǯan*
Negidal$_1$	*omon*	*ʒūl*	*elan*		*tońŋa*					
Negidal$_2$	*ɵmən*	*dʒūl*	*ilan / jəlan*	*diɣin /dīn*	*toŋŋa*	*ɲuŋun*	*nadan*	*dʒapkun*	*(i)jəɣin*	*dʒān*
Solon$_1$	*əmů^n*	*ǯūr*	*ila^n*	*digi^n*	*toŋa*	*ńůŋů^n*	*nada^n*	*ǯakku^n*	*jəgi^n*	*ǯā^n*
Solon$_2$	*emün*	*jüür*	*ilan*	*digin*	*toŋa*	*niŋün*	*nadan*	*jaxun*	*jegin*	*jaan*
Oroqen	*umun*	*dʒuur*	*ilan*	*dijin*	*toŋŋa*	*ɲuŋun*	*nadan*	*dʒapkon*	*jəjin*	*dʒaan*
Udihe$_1$	*omo^N*	*ʒū^R*	*ila^N*	*di^N*	*tuŋa^N*	*ŋuŋu^N*	*nada^N*	*ʒakpu^N*	*jəji^N*	*ʒā^N*
Oroč	*omo*	*ǯū*	*ila^n*	*di^n*	*tu̇ŋa*	*ńuŋu*	*nada*	*ǯappu̇*	*xuju^n*	*ǯā^n*
Orok	*gīda//gēda*	*dū*	*ila(n)*	*ʒīn*	*tu̇nda*	*nuŋu(n)*	*nada(n)*	*ʒappu̇(n)*	*xuju(n)*	*ʒon*
Ulča	*umu^n*	*ʒu̇əl*	*ila^n*	*dui^n*	*tu̇ńʒa*	*ńuŋgu^n*	*nada^n*	*ʒakpu^n*	*xuju^n*	*ʒu̇a^n*
Nanai	*əmun*	*ʒuər*	*elan*	*duin*	*tojŋga*	*ŋuŋgun*	*nadan*	*ʒapkun*	*hujun*	*ʒoan*
Hezhen	*əmkən*	*dzuru*	*ilan*	*dujin*	*sundza*	*niŋun*	*nadan*	*dʒaqun*	*ujyn*	*dʒuan*
Tg. Kon.	*amka*	*czivo*	*jelan*	*tuin*	*guincza*	*niumu*	*nadan*	*czachun*	*unjun*	*czuen*
Manchu$_1$	*emu*	*ǯuwe*	*ilan*	*duin*	*sunǯa*	*ninggun*	*nadan*	*ǯakûn*	*uyun*	*ǯuwan*
Manchu$_2$	*əmkən*	*dʂo*	*ilan*	*duin*	*sundza*	*nyŋŋun*	*nadən*	*dʒoqoŋ*	*ujyn*	*dʒuan*
Manchu$_3$	*emu*	*chue* |*ǯüe*|	*ilan*	*tuin* |*duin*|	*funcha* |*sunǯa*|	*niugoun* |*niŋun*|	*nadan*	*chacoun* |*ǯakün*|	*oyun oyün*	*chuen* |*ǯüen*|
Xibe$_1$	*əmkən*	*dʒu*	*ilan*	*dujin*	*sundza*	*niŋun*	*nadən*	*dʒaqun*	*ujin*	*dʒuan*
Xibe$_2$	*əm(kə^n)*	*ju*	*yila^n*	*duyi^n*	*sunja*	*ňiŋu^n*	*nadə^n*	*jaqů^n*	*uyi^n*	*j^{ii}a^n*
Jurchen$_1$	*emu*	*ǯuwe*	*(j)ilan*	*dujin*	*ĉunǯa*	*niunǯu*	*nadan*	*ǯa(h)kun*	*hujehun*	*ǯuwa*
Jurchen$_2$	*emu*	*ǰue*	*ilan*	*du'in*	*šunǰa*	*ninggu*	*nada*	*ǰakun*	*uyun*	*ǰuan*
*pTg.	*ämün*	*ǯöwär*	*jïl(e)lan*	*duj-gin*	*tuańŋia*	*ńiŋ-gün / ńil-gün?*	*nadan*	*ǯïab-kun*	*xüńiä-gin*	*ǯuwan // mi̯an*

Tg. Kon. = Tungusi Konni, i.e. 'Evenki with horses'.

	11	12	13	14	15	16	17	18	19
Even$_2$	*mıan өmen // mıan ome-ɲ hulek*	*mıan dʒɵ:r // mıan dʒɵ:r-dʒi hulek*	*mıan ılan // mıan ıla-ɲ hulek*	*mıan digen // mıan dige-ɲ hulek*	*mıan tunŋan // mıan tunŋa-ɲ hulek*	*mıan ɲuŋen // mıan ɲunŋe-ɲ hulek*	*mıan nadan // mıan nada-ɲ hulek*	*mıan dʒapkan // mıan dʒapka-ɲ hulek*	*mıan ujun // mıan uju-ɲ hulek*
Even$_3$	*omun-dzian*	*dzur-dzian*	*ilan-dzian*	*digin-dzian*	*dziakon-dzian*	*nun-dzian*	*nodan-dzian*	*dziabkon-dzian*	*jigin-dzian*
Even$_4$	*omïn-ǯuluk*	*ǯur-ǯulúk*	*ilan-ǯulúk*	*dïgin-ǯulúk*	*toŋan-ǯulúk*	*njuŋun-ǯulúk*	*nadan-ǯulúk*	*ʒapkun-ǯulúk*	*ujun-ǯulúk*
Evenki$_2$	*ʒān umūn*	*ʒān ʒūr*	*ʒān jilan*	*ʒān dïgin*	*ʒān tunŋa*	*ʒān ńuŋun*	*ʒān nadan*	*ʒān ʒapkun*	*ʒān jegin*
Evenki$_3$	*ommukòn-ǯihöllika*	*djur-ǯihöllika*							
Negidal$_2$	*dʒān өmən*	*dʒān dʒūl*	*dʒān ilan / jəlan*	*dʒān diɣin / dīn*	*dʒān toŋŋa*	*dʒān ɲuŋun*	*dʒān nadan*	*dʒān dʒapkun*	*dʒān jəɣin*
Solon$_2$	*jaan emün*	*jaan jüür*	*jaan ilan*	*jaan digin*	*jaan toŋa*	*jaan niŋün*	*jaan nadan*	*jaan jaxun*	*jaan jegin*
Oroqen	*dʒaan umun*	*dʒaan dʒuur*	*dʒaan ilan*	*dʒaan dijin*	*dʒaan toŋŋa*	*dʒaan ɲuŋun*	*dʒaan nadan*	*dʒaan dʒapkʊn*	*dʒaan jəjin*
Udihe$_2$	*dʒā omo*	*dʒā dʒū*	*dʒā ila*	*dʒā dī*	*dʒā tuŋa*	*dʒā ɲuŋu*	*dʒā nada*	*dʒā dʒakpu*	*dʒā jəji*
Oroč	*ǯā omo*	*ǯāń ǯū*	*ǯā ila^n*	*ǯā di^n*	*ǯā tiŋa*	*ǯā ńuŋu*	*ǯā nada*	*ǯā ǯappù*	*ǯā xuju*
Orok	*ʒon gēda*	*ʒon dū*	*ʒon ila(n)*	*ʒon ʒin*	*ʒon tùnda*	*ʒon nuŋu(n)*	*ʒon nada(n)*	*ʒon ʒappù(n)*	*ʒon xuju(n)*
Ulča$_2$	*dʒua umu*	*dʒua dʒuəl*	*dʒua ila*	*dʒua dui*	*dʒua tuŋdʒa*	*dʒua ɲuŋgu*	*dʒua nada*	*dʒua dʒakpu*	*dʒua xuju*
Nanai	*ʒoan əmun*	*ʒoan ʒuər*	*ʒoan elan*	*ʒoan duin*	*ʒoan tojŋga //* di. ***tookon***	*ʒoan ŋuŋgun*	*ʒoan nadan*	*ʒoan ʒapkun*	*ʒoan hujun*
Hezhen	*dzuan əmkən*	*dzuan dzu*	*dzuan ilan*	*dzuan dujin*	***tobqon***	*dzuan niŋun*	*dzuan nadan*	*dzuan dzaqun*	*dzuan uyin*
Tg. Kon.	*czuen amka*	*czuen cziwo*							
Manchu$_1$	*ǯuwan emu*	*ǯuwan ǯuwe*	*ǯuwan ilan*	*ǯuwan duin*	***tofoxon***	*ǯuwan ninggun*	*ǯuwan nadan*	*ǯuwan ǯakûn*	*ǯuwan uyun*
Manchu$_2$	*dzuan əm*	*dzuan dʂo*	*dzuan ilan*	*dzuan duin*	***toqoŋ***	*dzuan nyŋŋun*	*dzuan nadən*	*dzuan dzoqoŋ*	*dzuan ujyn*
Manchu$_3$	*chuen emu-|ǰüen emu|*	*chuen chue-|ǰüen ǰüe-|*	*chuen ila-|ǰüen ila-|*	*chuen tui-|ǰüen dui-|*	***tofhou-|tofhu-|***				
Xibe$_1$	*dzuan əm*	*dzuan dzu*	*dzuan ilan*	*dzuan dujin*	*dzuan sundza //* ***tofχun***	*dzuan niŋun*	*dzuan nadən*	*dzuan dzaqun*	*dzuan ujin*
Jurchen$_1$	*omsio*	***ǰirxwan***	***gorxwan***	***durxwan***	***tobuxwan***	***ni[ŋ]un***	***daRxwan***	***niuxun***	*oniuxwan*
Jurchen$_2$	**ǰuan emu*	**ǰuerhon*			****tofu***				
Jurchen$_3$	*omšo[n]*	***jirhûn > jûrhûn***	***gûrhûn***	***durhun***	***tofûhûn***	***nilhun***	***dalhûn***	***niohun***	*oniohûn*
*pTg.	*ǰuwan / mïan ämün*	*ǰuwan / mïan ǰöwär*	*ǰuwan / mïan jïl(e)lan*	*ǰuwan / mïan dujgin*	*ǰuwan / mïan tuańŋia*	*ǰuwan / mïan ńiŋgün*	*ǰuwan / mïan nadan*	*ǰuwan / mïan ǰïabkun*	*ǰuwan / mïan xüńiägin*

Cf. Manchu *omšon* “11th month”; *ǯorxon* “12th month”; *tofoxon* “15; 15th day of month”; *niolxun* “16th day of the 1st month”; *dorxon* “seven-year-old boy”; Solon *úiš’un bé*, *umšóń bé* “11th moon” (*TMS* II, 272).

Note: Various patterns of teens in the Tungusic languages were analyzed by Pritsak 1955.

	20	30	40	50	60	70	80	90	100	1000
Even$_1$	*ʒūrmēr*	*elanmēr*	*digənmēr*	*tunŋanmēr*	*ŋuŋənmēr*	*nadanmēr*	*ʒapkanmēr*	*ujūnmēr*	*ńamā*	(***miŋgan*** 10 000)
Even$_2$	*dian-dzi-alakan*	*mugina-dzian*	*digin dzan dzialakan*	*toŋan dzan dzialakan*	*nugun dzian dzialakan*	*nadan dzian dzialakan*	*dzabkan dzan dzalakan*	*jugnan dzan dzalakan*	*niema*	
Even$_3$	*ǯur-mer*	*ilan-mér*	*dïgin-mer*	*toŋan-mer*	*njuŋún-mer*	*nadán-mon!*	*ǯapkun-mer*	*ujún-mer*	*njamál*	*men-djamál*
Evenki$_1$	*ʒūr ʒār*$_2$ *// **orin***	*ılanʒār // **gucin***	*diginʒār // **ducin***	*túnŋaʒār*	*ŋuŋunʒār*	*nadarnʒār*	*ʒapkunʒār*	*jəginʒār*	*ńamāzı*	***miŋan***
Evenki$_3$	*djur-ǯar*	*illen-ǯar*	*diggin-ǯar*	*töŋnja-ǯar*	*njuŋun-ǯar*	*naddan-ǯar*	*ǯapkun-ǯar*	*jöggin-ǯar*	*nemáǯi*	*ǯan-nemaǯi*
Negidal$_1$	*ʒulʒan // **o(j)in***	*elanʒan*	*dıyinʒan*	*toŋńaʒan*	*ńuŋunʒan*	*nadanʒan*	*ʒapkunʒan*	*jəʏinʒan*	*ńama // taŋgu*	***ḿeŋgan***
Solon$_2$	***orin***	***gotin***	***dexi/dəkkī***	*toŋŋɛɛ*	*niŋüŋŋɛɛ*	*nadaŋŋɛɛ*	*jaxuŋŋɛɛ*	***yeren***	*namaaji*	***miŋgan***
Oroqen	***orın***	***gotın***	***dəki***	*toŋŋa-ŋı*	*nuŋun-ŋı*	*nadan-ŋı*	*dʒapkɔn-ŋı*	***jərəən***	*ɲamaadʒı*	***mıŋga***
Udihe$_1$	***waji***^{N}	*ilaʒa*	*dïʒə*	*tuŋaʒa*	*ŋuŋuʒə*	*nadaʒa*	*ʒakpuʒa*	*jəjïʒə*	*taŋgù*	***miŋga***
Oroč	***oi***	***gùtu***	*dïńǯə̄*	*túŋańǯā*	*ńuŋguńǯə̄*	*nadańǯā*	*ǯappuńǯā*	*xujuńǯə̄*	*taŋgù*	***miŋga***
Orok	***xori(n)***	*ilando*	*ʒindo*	*túndado*	*nuŋundo*	*nadando*	*ʒappùndo*	*xujundo*	*taŋgu*	***miŋga(n)***
Ulča$_1$	***xorï***^{n}	***gutï***^{n}	***dəhi / dəji***	***sùsai***	*ńuŋguńʒu*	*nadańʒù*	*ǯakpùńʒù*	*xujuńʒu*	*taŋgù*	***miŋga***^{n}
Nanai	***horin***	***gocin***	***dəhin***	***sosi***	*ŋuŋgujŋgu*	*nadajŋgu*	*ʒapkojŋgo*	*huju(j)ŋgu*	*taŋgu*	***meŋgan***
Hezhen	***orin***	***ɢocin***	***dəxi***	*susai*	*nindzu*	*nadandzu*	*dzaqundzu*	*ujndzu*	*taŋu*	***miŋan***
Tg. Kon.	***oren***	***ceuzin***	***tanhi***	*zuzei*	*niumhu*	*nadanzu*	*czachunzu*	*kunjuntzu*	*tengun*	***ming***
Manchu$_1$	***orin***	***gûsin***	***dehi***	*susai*	*ninǯu*	*nadanǯu*	*ǯakûnǯu*	*uyunǯu*	*tanggū*	***minggan***
Manchu$_2$	***orin***	***ɢoʒin***	***duixe***	*sudzɛ*	*nyŋŋundzo*	*nadəndzo*	*dzoqoŋdzo*	*ujyndzo*	*taŋŋoŋ*	***miŋŋa***
Manchu$_3$	***orin***	***coufin*** |***gusin***|	***tehi*** |***dehi***|	*foufei* |*susei*|	*ningchu* |*niŋǯü*|	*nadanchu* |*nadanǯü*|	*chacunchu* |*ǯakünǯü*|	*coyunchu* |*hoyünǯü*|	*tangon*	***minga***
Xibe$_1$	***orin***	***ɢocin***	***dix***	*susai*	*indzū*	*nadəndzi*	*dzaqundzi*	*ujindzi*	*taŋ*	***miŋan***
Xibe$_2$	***orï***^{n}	***goźï***^{n}	***dih***	*suzai*	*lnč*	*nadənč*	*jaqůnč*	*uyinč*	*taN*	***miŋan***
Jurchen$_1$	***horin***	***guĉin***	***dexi***	*susaj*	*ni(u)ŋǯu*	*nadanǯu*	*ǯa(h)kunǯu*	*hujehunǯu*	*tangu*	
Jurchen$_2$	***ori***	***guši***	***dehi***	*susai*	*ninǰu*	*nadaǰu*	*ǰakunǰu*	*uyunǰu*	*tanggu*	***mingga***
*pTg.	*ǯöwär-ǯuwan/r //ǯöwär-mïar // **xorīn***	*jïllan-ǯuwan/r // jïllan-mïar // **gutīn***	*dujgin-ǯuwan/r // dujgin-mïar // **denxi***	*tuańŋia-ǯuwan/r //tuańŋian-mïar*	*ńiŋgün-ǯuwan/r // ńiŋgün-mïar*	*nadan-ǯuwan/r // nadan-mïar*	*ǯabkun-ǯuwan/r // ǯabkun-mïar*	*xüńiägin-ǯuwan/r //xüńiägin-mïar*	*ńamā(-ǯïn) // taŋū*	***miŋgan***

Note: The bold letters indicate the loans. The symbol / separates variants of one form; // separates different forms. The reconstructions follow Blažek 1999, 120, modifying Benzing 1955.

8.3.2. Sources of the Tungusic numerals

Even$_1$: Benzing 1955: 101–3. **Even$_2$:** Malčukov, Girfanova, Burykin 2007/N. **Even$_3$:** Witsen 1705: 678. **Even$_4$** by Oxotsk**:** Klaproth 1823: xxxxvii-xxxxviii; cf. Even of Oxotsk by Pallas, #149 with differences in *dlapkun* "8" (misprint?), *mieŕ* "10", *njama* "100", *meŕ-njamal'* "1000". **Even$_5$:** Billings & Saryčev 1811, cited after Anderson 1982: 53. **Evenki$_1$:** Benzing 1955: 101–3. **Evenki$_2$:** Konstantinova 1968: 76. **Evenki$_3$ of Mangazeia:** Klaproth 1823: xxxxvii-xxxxviii; cf. Evenki of Mangazeia by Pallas, #145 with differences in *ǯańńemáǯi* "1000". **Hezhen:** An Jun 1986/N. **Jurchen$_1$:** Mudrak 1985. **Jurchen$_2$:** Kane 1989. **Jurchen$_3$:** Janhunen 1993. **Manchu$_1$:** Benzing 1955: 101–3. **Manchu$_2$:** Wang Qingfeng (*A Grammatical Sketch of Manchu language*, Minzuyuwen)

1984/N. **Manchu$_3$:** Gerbillon 1696: 8–9. **Nanai:** Benzing 1955: 101–3. **Negidal$_1$:** Benzing 1955: 101–3. **Negidal$_2$:** Girfanova 2007/N. **Oroč:** Benzing 1955: 101–3; Avrorin & Lebedeva 1968: 199–200. **Orok:** Petrova 1968: 179. **Oroqen = Oročun:** Hu Zhengyi 1986/N. **pTg**. = **proto-Tungusic** – Blažek 1999: 120. **Solon$_1$:** Benzing 1955: 101–3. **Solon$_2$:** Tsumagari 2009: 7–8. Cf. Evenki by Hu Zhengyi & Chaoke (*A Grammatical Sketch of Evenki language*, Beijing) 1986/N / **Solon Managir:** Benzing 1955: 102. **Tg. Kon.** = **Tongusi Konni:** Strahlenberg 1730. **Udihe:** Benzing 1955: 101–3. **Udihe$_2$:** Girfanova 2007/N. **Ulča$_1$:** Sunik 1968: 158–9. **Ulča$_2$:** Girfanova 2007/N. **Xibe$_1$:** Taeho Jang 2013/N. **Xibe$_2$:** Zikmundová 2013.

8.3.3. Comparative-etymological analysis of the Tungusic numerals

30. Tg **ämün* (Benzing) = **emū-n* (Starostin) = **emö-n* (Janhunen) "1" has been compared with WrMo. *ebür* "Vorderseite, Süd, Südseite des Berges; Brust, Schoss", dat. *emüne* "vornen", Kalmyk *ömnŏ* "vorn, voran, nach Süden" (the alternation of *-r-*/*-n-* suffixes apears also in other words, e.g. *dotur* "Innenseite" vs. *dotuna* "innen" or *γadar* "Aussenseite" vs. *γadana* "aussen"), cf. also WrMo. *ebüče-* "vereinigen" (Ramstedt 1907, 5; *EDAL* 505). Ramstedt (1949, 54) compared Manchu and Nanai *emuči* "the first" with Kor. *ẹmži*, isolated from *ẹmži-sonkkărăk* "thumb" (*sonkkărăk* "finger"). Murayama (1958, 229; 1966, 154) and Miller (1971, 230) added Jp. *omo* "paramount" < OJp. *ömö* "Gesicht, Vorderseite, Hauptsache". Jurchen **omšo*[*n*] "11" and Manchu *omšon* "11th month" are more probably borrowed from Mo. *onča* "special, separate, unique", rather than inherited from Tg. **ämün* "1" (Janhunen 1993, 172). The same origin is evident also for Solon *úiš'un bé*, *umšóń bé* "11th moon" (*TMS* II, 272) in contrary to Miller (1975b, 151), who saw here the traces of Manchu "9".

31. Tg **ǯöwä-*(*r*) "2", originally perhaps **ǯöwi* "2" and **ǯöwi-är* > **ǯöwär* "pair", corresponds to Mo. **ǯirin* "2" (about women), **ǯöbe-ger* "one of two" (§20f) and accepting the secondary palatalization (see Mo. "2") also to MKor. *tūrh*, OKor. **tubir* ~ **tuwir* "2" (Starostin 1991, 33), OJp. *ture* "companion", Tk. **dür* "equal", **[d]üŋ* "pair. Cf. also Even *dúdgun* "pair, couple", Udihe *dogdi* "husband; wife" (*TMS* I, 219). Janhunen (1993, 173) thought that Jurchen **ǯirhûn* "12" represented rather a Mongolic import than a continuant of Tungusic "2". But the reading **ǰuerhon* of Kane (1989, 195, #308) based on the Awanokuni manuscript is closer to the Tungus protoform than to any Mongolic source.

External relations: Bouda (1953, 165) compared Tungusic "2" with Tamil *cōḍu* "pair", isolated within Dravidian (cf. Menges 1977, 140). This comparison would imply an originality of **ǯ-* or **č-* in the form preceding the numeral "2" in Tungus and Mongolic on the Altaic level. On the other hand, in that case the relationship of MKor. *turh* "2" should be excluded.

32. Tg. **ïlan* “3” reconstructed by Benzing cannot be the starting-point for some divergent forms: “Tongusi Konni {Horse’s}” *jelan* (Strahlenberg), Lamut (= Even) of Aldan *ilelan* (Billings), *ellan* (Erman), “Tongusi Sabatschi {Dog’s}” = Lamut of Kamchatka Bay *ullan* (Strahlenberg), *üttan*! (Messerschmidt). Several hypothetical alternative protoforms, accompanied by internal or external parallels, should be taken in account:

32.1. **ili-lan*, perhaps derivable from Tg. **ili-* “to stand” (*TMS* I, 302–03), if “3” was named after the “middle finger” = “standing out finger”; Ramstedt (1949, 167) derived it from the verb appearing in Oroč *il*(*i*)*ča-* “to bind a rope from three fibres”, but Orok & Nanai *sị̈lị̈-*, Olča *sị̈lü-* “to braid hair” indicate pTg. **xili-* (Benzing 1955, 41; *TMS* I, 311).

32.2. **ul[i]-lan*, perhaps comparable with Tk. **ül-* “to divide, distribute” (Räsänen 1969, 520). Sevortjan (I, 628–629) connected it with Tg. **il-* “to measure” (*TMS* I, 309). The numeral inspired by a measure has analogy e.g. in East Cushitic **šazḫ-/*šizḫ-/*šaz(z)iḫ-* “3”, etymologizable with help of the Akkadian length-unit *šīzum*, *šizû* “one-third cubit” (Blažek 2001, 23).

32.3. **ut*(*V*)*-lan*, the least probable protoform, comparable perhaps with Tk. **ūč* “3”, but with difficulties, since the change **č* > *t* is known only in Orok (*EDAL* 157).

32.4. **[ň]ïla-n*, proposed by Vovin (1993b, 256) to compare it with MKor. *sey*(*h*) & **-ńe[ ]i* “3”; cf. also MKor. *nirkup* “7”, interpreted as “3 bent [fingers]” (Ramstedt 1949, 77, 167).

Hypothetical substratum influence:

32.5. **yilan*, reflected in Jurchen *(j)ilan* (Mudrak), Xibo *yila*^{n} “3” (Zikmundová), Tongusi Konni *jelan*, Negidal *jəlan* and the form *gilaŋ* from Amur attested by Gerstfeldt with *g-* = *y-*? (see Schmidt 1933, 366) can be compared with Yukaghir (Tundra) *jalo-*, (Kolyma) *jalo-* “3” (predicative) (Ramstedt 1907, 9; Krejnovič 1982, 119);

32.6. **illan*, reflected in Evenki of Mangazeia by Pallas & Klaproth as *illen*, resembles Eskimo (Mackenzie R.) *illa·k* “the third” (Thalbitzer 1908, 22–23).

With regard to unconvincing internal and external etymological attempts, the substratum hypothesis seems to solve this question better than others.

Note$_1$: Jurchen *gorxwan* (Mudrak) = *gûrhûn* (Janhunen) “13” is doubtless of Mongolic origin (Janhunen 1993, 173–174; only Miller 1975b, 146 speculated about Altaic heritage).

Note$_2$: Lamut (= Even$_3$) *mugina-dzian* “30” (*dzian* = “10”), recorded by Witsen (1705), is absolutely unique in Even$_3$ and quite enigmatic within the Tungusic system of numerals in general. All other tens are formed according to the pattern “cardinal” x “10” + *dz(i)alakan*: *dian-dzialakan* “20”, *digin dzan dzialakan* “40”, *toŋan dzan dzialakan* “50”, *nugun dzian dzialakan* “60”, *nadan dzian dzialakan* “70”, *dzabkan dzan dzalakan* “80”, *jugnan dzan dzalakan* “90”. In such a case it is legitimate to seek origin of *mugina-dzian* “30” in some substratum source. A good candidate could be Čukči *qlikkin mənyəkên*

parol “30”, where *qlikkin* = “20” and *mənyəkên* “10”. It is possible to imagine a hybrid compound, consisting of Čukči *mənyəkên* (as a reduction of the whole syntagm *qlikkin mənyəkên parol* “30”) + Even$_3$ *dzian* with grammaticalized function > *mugina-dzian* “30”.

Less probable is to separate the root **mu-* and seek its function compatible with the meaning “30”. In Tungusic e.g. Evenki *muje* “edge” or Olča *mejen* “a space between two objects” (*TMS* I, 551) are not very convincing cognates. More attractive seem OJp. *mi-* “3” = *myi-* (Martin), Koguryŏ **mit* (Miller), but why would just such an isolated form as *mugina-dzian* “30” correspond with them?

33. Tg **dujgin* (Dybo) = **dügin* (Starostin, Janhunen) = **dïgin* (Vovin 2005–09, 358) = **dügün* (Benzing) “4”.

Proposed Altaic cognates: Tk. **dȭrt* // Mo. **dörben* “4”, **dörigü* “vier Finger breit”, **dörtün* “40” // pJp **də-* “4”. The loss of the expected *-r-* in Tungusic is probably regular in certain positions (Starostin 1991, 20–21, 91). The suffix **-gin* resembles the same suffix as that forming feminine nouns in Evenki (Benzing 1955a, 76).

Internal Altaic etymology: The root **dör-* may be connected with Kalmyk *dörö* “Treppe, Erhöhung” < **döre* and Evenki *dörā̄* “Hügel” (missing in *TMS*; quoted after Ramstedt 1935, 99). The primary meaning could be extrapolated from *”knuckles [of a hand] together” > “four”. This conclusion agrees very well with Turkic data, where Chuvash *türt* “Rücken” in the idiom *ală türt-ĕšĕ* “Handrücken” (Egorov 1964, 266; Doerfer 1971b, 338) suggests a very similar primary semantic motivation.

Note$_1$: Manchu *durbe* “a dog with four eyes” and *durbežen* “tetragon” are borrowed from Mongolic (Ramstedt 1907, 7–8).

Note$_2$: Jurchen *durhun* (Janhunen) = *durxwan* (Mudrak) “14” is also borrowed from some Mongolic (Kitan?) source (Janhunen 1993, 174, while Miller 1975b, 146, assumed a common Altaic heritage).

34. Tg. **tuńga* (Benzing, Starostin) = **tuńŋa* (Janhunen) = *[*i*]*tuńga* (Vovin).

Proposed Altaic comparanda:

34.1. It has usually been compared with Mo. **tawu-*[*γa*]*n*, MKor. *tasăs*, Koguryŏ *utu* and OJp. *itu* “5”, perhaps also Old Danube Bulgar *exmeмъ* “5th”, implying **etə* “5” (Mudrak 2005, 101) and the puzzling Čaghatai *ittik* “50” (see §14.2.). The reconstruction of Vovin (1994a, 106 and 1994b, 253) explained the initial **c-* > *s-* in South Tungusic languages as follows: **ituńga* > **ṭ̠iuńga* > South Tungus **cuńǯa*. This rather artificial reconstruction has its most important support (and maybe the main motivation) in OJp. *itu*, but there is even a hypothetical substratum parallel in Eskimo *itu-mak* “the palm of the hand” (Thalbitzer 1908, 23).

Note$_1$: Benzing (1955a, 31) proposed an alternative reconstruction **tungia* (cf. Evenki of Yenisejsk *túŋya*) > *tunǯa* (Olča) > *sunǯa* (Manchu) with analogical distant pal-

atal assimilation as in Tg. **tärgän* > Manchu *seǯen* (Tg. **-rg-* > Manchu *-ǯ-* regularly). Cf. also Norman 1977. "Tongusi Konni" *guincza* "5" (Strahlenberg) probably represents an erroneous recording of some continuant of South Tungusic **cunǯa*.

34.2. Poppe (1960, 73) compared Tungusic "5" (**tuŋā* in his reconstruction) with WrMo. *toγa*, MMo. [Secret History] *to'a*, [Muqaddimat] *to'an*, *tōn*, Moghol *toa*, Dagur, Khalkha, Kalmyk *tō* "number" (Vladimircov 1929, 195, 214; Ramstedt 1935, 404; Poppe 1955, 70).

Internal etymology:

34.3. The etymology is probably solvable within Tungusic proper, if the numeral "5" represents a compound consisting of the following members: (i) Tg. **tawun-* "to read; count", continuing also in Oroč *taun* "every, all", Udihe *tau*(*n*-), Nanai *tao*(*n*-) "every, all; number" (*TMS* II, 161–162); (ii) Tg. **ńiŋi* "finger" (Oroč *ńiŋi* id., Udihe *ń*/*niŋi* "a breadth of the joint of a finger", see *TMS* I, 639). The whole compound **tawu*(*n*)- *& *ńiŋ-* or **tuwa*(*n*)- *& *ńiŋ-* "all fingers" or "a number of fingers", gives finally **tu*(*a*) *ńŋia*(*n*) "5" (the traces of the diphthong **-ua-* appear in Solon *tuaŋán*, *tuaŋēn* according to Ivanovskij – see *TMS* II, 214). Perhaps a similar structure can be identified in MKor. *tasăs* "5", analyzed already by Ramstedt (1949, 77, 258–259) as a compound of Kor. *tā* "all, every one" and *son* "hand" < MKor. *ta & swon* respectively. MKor. *tàsós* (Vovin) is derivable from **tansos* with regard to absence of lenition, like MKor. *yèsús* "6" < **yonsus* (Vovin 2010, 14, 220). The internal reconstruction could be deeper, assuming metathesis **-ns-* > **-sn-* and syncope: **ta-sn-os* < **ta-son-os*, interpretable as "of whole hand" or "all [fingers] of the hand" (Martin 1996, 30, 37; 43, 44). The final *-os* is the suffix *-$^{o}/_{u}$s* with the nominalizing-adverbial function.

Note$_1$: Ramstedt (1949, 284; 1952, 65) proposed an alternative and very improbable solution, assuming a borrowing of Tg. "5" from Sino-Korean *thoŋ* "all, the whole, collectivelly; a collection of five houses in census records". His comparison of Manchu *sunǯa* "5" and Evenki *solto* "fist" (Ramstedt 1949, 241) must be rejected.

Note$_2$: The similarity of South Tungusic **susai* "50" and MKor. *:swuyn* id. is very suggestive, especially in the light of Vovin's (2010, 221) derivation from **swùy-ón* < **swùy-zón* < **swùy-són*.

Note$_3$: Lamut (= Even$_3$) *ǯiakon-ǯian* "15" after Witsen (1705) is incomprehensible. It is perhaps possible to think about some relation of *-kon* with Oroč *kondo*, Udihe *kandugu* "half" (*TMS* I, 412). The whole compound should mean "ten-half + ten" = "10/2 + 10" = "15".

Note$_4$: Jurchen *tobuxwan* (Mudrak) = *tofûhûn* (Janhunen) "15", Manchu *tofoxon* "15; 15th day in a month", Nanai *tookon*, (Sungari) *tovokon* "15" (Schmidt 1933, 366; Benzing 1955a, 101) are undoubtedly borrowed from some Mongolic source (see a more detailed discussion in Janhunen 1993, 174–175, 180).

35. Tg. **ńöŋün* (Benzing) = **ńöngön* (Janhunen) = **ńuŋun* (Starostin, Vovin) = **ńiŋgun* (Poppe) "6".

Proposed Altaic comparanda:

35.1. Poppe (1960, 130) assumed the older protoform **nirgun* to compare it with Mo. **ǯirγuγan* – more in §24).

35.2. Starostin (1991, 78, 141) and Vovin (1994a, 106) compared Tg. **ńuŋun* "6" with OJp. *mu* "6", deriving the latter from **ńu-*. On the other hand, this numeral can be derived by internal apophony from OJp. *myi* "3" – cf. the pairs 1 : 2, 3 : 6, 4 : 8 (Miller 1971, 237; Syromiatnikov 1981, 71; already Schott 1853, 11). Starostin (1991, 141) also speculated about a relationship of MKor. *'yəsïs* "6" (Lee), assuming an early loss of **n-*. In *EDAL* 1020 Mo. **ǯirγuγan* "6" is added too.

Internal etymologies:

35.3. Poppe's reconstruction (1960, 130) **ńiŋgun* allows us to see here a derivative of Tg. **ńiŋi* "finger" (*TMS* I, 639; cf. also Tungusic "5" in §34.3). Identifying in the final **-gun* the suffix attested e.g. in Evenki *bi-kūn* "I [am] great" (Sunik 1982, 106), the numeral can be analyzed as **ńiŋgun* "6" < **ńiŋ-kūn* *"[one] finger more" (Benzing 1955, 91 reconstructed **-kō̄n*).

35.4. Schmidt (1933, 367) derived Manchu *niŋgun* "6" (his solution is compatible with Poppe's reconstruction) from Manchu *niŋgu* "oberhalb" (*TMS* I, 598 "top, peak; zenith"), i.e. "6" = *"[1] over [5]".

35.5. Jurchen *nilhun* (Janhunen) = *nül-xon & ni-xun* (Miller) "16" and Manchu *niolxun* "16th day of the first month" cannot be directly derived from any Mongolic source. Janhunen solves it by postulating pMo. **nil-* "6", which had to be replaced by **ǯirγuγan* "6", for its transparent internal structure interpreted as an innovation. But Janhunen himself admits a proximity of Tungusic "6" and South Tungusic "16", explainable as a common Tungusic heritage. If we accept this idea, the reconstructions **ńöl-gün* "6" and South Tg. **ńol-xun* "16" are possible. The irregular development of the cluster **-lg-* (see Benzing 1955, 45 about regular correspondences) could have been caused by the influence of the preceding numeral **tuńŋia* or perhaps by nasal assimilation **ńölgün* > **ńöŋün*? The development from **ńöl-ǯün* *"x [subtracted from] 10" is in principle also possible, if x = 4, cf. Oleni Evenki *nucun*, and Jurchen (Mudrak) *niuŋǯu* "6" concerning the vowel of the final syllable. The root **ńöl-*//**ńol-* *"4" has no convincing internal Tungusic etymology (maybe Evenki *ńol* "big, large, great; rough" – see *TMS* I, 643; cf. also WrMo. *neliyen* "much, enough, large"). But there is a promising cognate in MKor. *:neyh* "4", with the bound forms *:ne-*, *:nek-* extended by classifiers derivable from **neki* via metathesis by Vovin (2010, 211). With regard to Kor. *narip* "in the fourth year (of animal)" it is probable to modify the reconstruction into **nerki-*. In §26.2.2. Mo. **nayiman* "8" is analzyed as **nayid* + **man* > **nayiman*, where **nayid* should be the regular plural to the hypothetical singular **nayil* *"4".

Note: An indirect support of the original semantic structure of the numeral "6" may be identified in Lamut (= Even) of the Kamchatka Bay, where Messerschmidt and Strahlenberg recorded *ďegen* // *degen* "4" vs. *ďgalkun* // *dagalkun* "6" respectively. If the element *-l-* reflects the ablative suffix **-lā-kï-*, this innovated numeral probably represents a subtraction *"4 [subtracted] from 10"?

Hypothetical external relations:

The form **ńöl-* *"4" can represent an original Altaic numeral "4" with very attractive external parallels in Nivkh *nu-*, *ny-* "4"; Fenno-Ugric **ńeljä* "4" (*UEW* 316) and Dravidian **nāl* "4" (Tyler 1968, 807), while the most wide-spread Altaic form **dör*[*i*] "4" seems to be an innovation with an internal Altaic etymology (cf. ## 4, 22).

Hypothetical substratum influence:

35.6. With regard to the promising Čukčo-Koryak etymologies of the Tungusic numerals "7" & "9", a hypothesis of the same origin for "6" is not so heretical. In fact, there is a good candidate in Koryak (near Karaga Isl.) *nun-malan* "6" (= "1 + 5") or Čukči (Steller) *annyan-millgin* etc. (Anderson 1984, 32).

36. Tg. **nadan* "7" is reconstructed quite unambiguously. The only rather divergent form *nadun* in Oleni dialect of Evenki (Strahlenberg) is explainable by the influence of *nucun* "6" and *ziapkun* "8".

Proposed Altaic comparanda:

36.1. The numeral has been compared with OJp. *nana-* and Koguryŏ (Murayama) *nanun* "7" (cf. Miller 1971, 242). Starostin (1991, 141) added Tk. **jätti* (< **jäddi* in his transcription) and MKor. *nirkup* "7". Regardless of evident phonetic problems of this comparison, Starostin, Dybo & Mudrak (*EDAL* 958–59) reconstruct Alt. **nad[i]* "7".

36.2. Miller (1971, 242) assumed a borrowing from Mongolic, reconstructing the following, rather risky, chain: Mo. **daluγan* "7" > **laduγan* > **ladaγan* > Tg. **nadan* > pJp. **nana-*.

Hypothetical substratum influence:

It is remarkable that the numeral "7" has probably been borrowed in several language families: Indo-European and Kartvelian from Semitic, Fenno-Permic from Baltic (or early Slavic according to Napolskix), Ugric from Indo-Iranian (or Tocharian according to Napolskix), Samoyed from Tocharian, South Cushitic from Bantu, East Cushitic from some Nilo-Saharan source (Surma?), etc. Consequently it is quite legitimate to seek some non-Altaic neighboring or substratal donor-language. One candidate is certainly the Nivkh language, a substratum for the Tungus languages from the basin of the lower Amur. But the form *ŋamg* "7" cannot be a source of Tg. **nadan.* Similarly Yukaghir, a substratum for some northern Even dialects, can be excluded (cf. Tundra *puskij-*, Kolyma *purkij-*, orig. "2 over [5]", where *kij-* = "2", Kolyma *pure-* "top", see Krejnovič 1982, 114). The last candidate, Čukčo-Kamčatkan, probably represents the

older recognizable stratum preceding the Tungusic languages. Burykin (1984, 20–23) collected several Tungusic etymons without Altaic cognates, but with promising Čukčo-Koryak parallels. And really, in Koryak (Pallas) *nyettan-myllaŋa* "7" (= 5+2, cf. *hittaka* "2" & *myllaŋa* "5"), Koryak of Karaga Isl. (Pallas) *ńyttyaka-šit* "7" vs. *nityakaw* "2" or Itelmen of Tigil River (Billings / Sauer) *nittanoo* "2" (< Koryak ?) vs. *ittax-tenu* "7" (Anderson 1984, 30–31) etc., a source with a transparent etymology can be found.

Note: Jurchen *dalhûn* (Janhunen) = *daRxwan* (Mudrak) "17" and Manchu *dorxon* "seven-years-old boy" are doubtless of Mongolic origin (Janhunen 1993, 176, in contrary to Miller 1975b, 147, seeing here an original Altaic archaism).

37. Tg. **ǯabkun* "8" must be reconstructed with **-b-* . The change **-bk-* > **-pk-* is certainly more natural than the change **-pk-* > **-bk-*, presumed tacitly by Benzing or Starostin. The forms with **-b-* are really attested in Solon (Ivanovskij) *ǯabkún*, Lamut (Witsen) *ʒiabkan*, Lamut of Aldan (Billings) *digkabkan* (!).

Internal etymology:

Ramstedt proposed two etymologies:

37.1. **ǯab-* is identified with Evenki *ǯabdar* "long" (*TMS* I, 239), while the second component has to have been borrowed from Sino-Korean *kon* "eldest (brother)". Ramstedt supposed the following semantic development: "long brother" > "long finger" > "middle finger" > "8" (Ramstedt 1949, 77; 1982, 89). Besides the bizarre semantic development, the adaptation of Middle Chinese 昆 **kon* in the Tang era excludes the proto-Tungusic age of the numeral (Miyake, p.c.). There is a more elegant solution, identifying the second component with Tg. **xuńakān* "finger" (*TMS* I, 276–277; Benzing 1955, 59), hence **ǯabkun* < **ǯabxun* *"long finger" (a medial allophon of Tg. **-x-* is **-k-*, cf. Starostin 1991, 21).

37.2. **ǯ-ap-kan* (sic) < **ǯu*(*r*)*-ap-* "2 before [10]", in analogy with Kor. *yətărp* < **yər-tur-ap* "10–2–before", i.e. "2 before 10" (Ramstedt 1982, 19; already Boller 1857b, 373/83 thought about connection of the numerals "2" and "8" in Tungusic). This etymology can also be modified and so supported. Accepting the reconstruction **ǯabkun*, the segmentation **ǯV-* "2", **aba* "no, not; to lack, be missing" (*TMS* I, 3) and **-kun* is possible. The function of the last segment remains open. The same *-kun* forms also the puzzling Lamut of Kamchatka Bay numeral *ďgalkun* // *dagalkun* "6", where the internal structure "4 subtracted from 10" is thinkable (see Tg. "6"). It is tempting to assume that the enigmatic numerals 12–19 in South Tungusic languages are terminated by the same suffix **-kun*. If we accept their identity, the meaning "10" of **-kun* is compatible with both its functions. This hypothetical conclusion has no evident support in the Tungusic languages. Perhaps only the quoted Tg. **xuńiakān* "finger" with the diminutive suffix **-kān*, which can be interpreted as a singulative. Hence the shortened form **xuN-* could

mean *"[all] fingers" → "10". The use of **aba* in such a compound remains without any analogy.

Proposed Altaic comparanda:

37.3. Starostin (1991, 141) segmented his Tungusic reconstruction **ǯa-pku-n* "8", comparing it with OJp. *ya-* "8" < **da-* without any deeper analysis. It was already Boller (1857, 373/83) who first connected the Japanese and Manchu numerals "8".

Note: Let us mention that Panfilov (1973, 9) reconstructed proto-Nivkh **xon* "10". Is there any connection with the suffix **-kun*?

38. Tg **xüńiägin* "9" should be reconstructed with **-ń-* instead of **-y-* (Benzing) on the basis of the forms *unjun* "9" and *kunjun-tzu* "90", recorded by Strahlenberg (1730) in one South Tungusic dialect named Tongusi Konni {Russian "Horse's Tunguses"}. The puzzling Jurchen *oniohûn* (Janhunen) = *onioxwan* (Mudrak) "19" also supports this reconstruction.

Note: Lamut (= Even) of Kamchatka Bay *gedin* was quoted in the 6th position of numerals of the first decad by Strahlenberg (1730; table V beyond p. 431), but only the position of the numeral *omokon* "1" was correct in this list. It could be a mangled record of **jegin* "9", cf. Even_3 *jigin* id.

Internal etymology:

38.1. The first component **xüńiä-* suggests the stem **xuńa-* "finger". The front vocalism could be caused by the suffix **-gin*, terminating perhaps also the numeral "4".

Proposed Altaic comparanda:

38.2. Miller (1971, 237) found a cognate of Tg. **xüyägün* (Benzing) "9" in OJp. *kökönö-* "9", assuming the multiplication "3x3", where the numeral "3" proper would be Mo. *γurban*. But he was not able to explain the difference between initial Tg. **x-* and Mo. *γ-*.

38.3. Starostin (1991, 141) reconstructed Tg **xegün* "9" for an easier comparison with OJp *kökönö-*, not respecting the forms like Jurchen *hujehun* or Evenki of Lower Tunguska *ijógjin* and the forms documenting the reconstruction **-ń(i)-*.

38.4. Poppe (1960, 32–33) rejected the initial pTg **x-* and reconstructed **yegün*, comparing it with CoMo. **yersün*. Vovin (2005–09, 363) thinks about two different protoforms in Tungusic, **yegin* and **xüyün.*

Hypothetical substratum:

38.5. Alternatively, the numeral can be of substratal origin in the same way as in the case of the numeral "7". A promising source appears again in the Čukčo-Koryak languages: Čukči (Bogoras) *qonyá-čyŋken*, Oleni Koryak *xoia-čankin*, Paren Koryak *qońḥay-čyŋken*, Kerek *qunhay-čiŋi* "9" etc. (Anderson 1984, 30, 51, including the comparison of Koryak and Tungus numerals "9").

39. Tg. **ǯuwan* “10”.

Proposed Altaic comparanda:

39.1. Ramstedt (1907, 22; Id. 1957, 67) compared Tg. **ǯuwan* “10” with Mo. **ǯaγ/wun* “100” (see §29).

39.2. Blažek (1999, 118) discussed a hypothetical relation of Tg. **ǯuwan* “10” with Kor. *čjuŋ* “all (of number)” (Ramstedt 1982, 42). In reality, it is a Sino-Korean adaptation of Middle Chinese **ćùŋ*, today 衆 *zhòng* “be numerous, all; multitude, common people, troop”, cf. Tg. **čuŋnu* “all, entirely” (*TMS* II, 415). Similarly Kor. *čoi* “all, altogether, entirely” belongs to Oroč *čupali* and Mo. *čo(γu)* “all” (Ramstedt 1982, 38), which are not apparently compatible with both Tg. **ǯuwan* “10” and Mo. **ǯaγun* “100”.

39.3. Miller (1971, 220–221, 236) thought about a connection with OJp. *töwo* “10”, speculating about pAlt. **d-*. Similarly Starostin (1991, 141), reconstructing pAlt. **čuwa* “10”, Vovin (1994a, 106), modifying it to **čuba-*, while in *EDAL* 398 the protoform **čo̯obe* is proposed. Miller (1971, 211–215) added Turkic **jŭ̄ř* ~ **ǯŭ̄ř* (Mudrak) “100”, deriving it from Altaic **dū-r*$_2$ and interpreting this reconstruction as the plural “tens”.

Internal etymology:

39.4. Ramstedt (1949, 77) tried to explain Tungusic **ǯuwan* “10” from Manchu *ǯuwan-* “to open the mouth, come loose”, supposing an original meaning *”open [hand]”. But the original meaning of this Tungusic verb was “to yawn” (*TMS* I, 281).

39.5. Perhaps a more promising internal etymology may be found in Manchu *uǯan* “end, edge, limit, top” (*TMS* II, 250) and *uǯu* “head, beginning” > “the first” (Benzing 1955a, 104; Poppe 1960, 63 found cognates in WrMo. *üǯügür* “Spitze, Oberende”, MMo. *üǯü’ür* “Ende”, Kalmyk *üzŭ̄r* – see Ramstedt 1935, 460; in *EDAL* 1482 the Mongolic data are connected with Kor. *uǯuk* “top of a tree” and Tk. **ūč* “end, edge”). The starting point could perhaps be **uǯu-an* > **ǯu(w)an* *”end of right [hand]” (cf. Tg. **an-* “right” – see *TMS* I, 40–41), or the adverb “till the end”, cf. MMo. *uǯu’uren* “bis zum Ende”. This solution is also compatible with Mo. **ǯaγ/wun* “100”, proposed as the cognate in §39.1. The tendency to eliminate the initial vowel appears in some modern Mongolic languages: Šira Yughur *ǯŭ̄r* “end”, Monguor *rǯu* “point, top”.

40. Even **mïan*, pl. **mïar* “10” (*TMS* I, 534); it also forms tens, cf. Even (Lamut in *Asia Polyglotta*) *ǰyúr-men* “20”, *elán-men* “30” ~ (Maydell / Schiefner) *dyor myär* “20”, *elán myär* “30”.

40.1. Related may be LMKor. *mañon* “40” < EMKor. [*Kyeylim* #31] **mae.nyin*, if these reconstructions of Vovin (1993b, 248, 255) are correct. In the positive case, is it possible to think about metathesis from **nay-mon* or **na-mion*? Ramstedt (1982, 105) compared Even **mïan* with Kor. *măn* “hand”, *mandi-* “fingern, mit den Händen betasten”, and the suffixes *-man* / *-ban* / *-ben* forming the Mongolic numerals 3, 4, 8, 10.

But there are at least alternative possibilities:

40.2. Kor. *mān* “amount, size, measure, number”, compared by Ramstedt (1982, 105) with the Tungusic suffix *-*mān* (e.g. **mïar-man* “ten series” – *TMS* I, 534);

40.3. MKor. *mān-hă-* “many”, related to OJp. *mane-si* “many, numerous” and further perhaps Čuvaš *mŏn* = *mъʷnъʷ* “big, large”; MMo. *mandu-* “to increase” and / or *mene* “very” and Tg. **mani* “crowd, flock” (Ramstedt 1982, 106; Martin 1966, 41–42; Starostin 1991, 94–95, 144–145; *EDAL* 901).

41. NTg. **ńamā-*(*ǯi-*) “100”.

41.1. Starostin (1991, 78, 141) compared it with OJp. *mwomwo* “100; a big number” < pJp. **muàmuà* < **màmuà* and OTk. *jom-γï* “big number, quantity, all”, reconstructing pAlt. **ń*[*ua*]*mV* “a big number; 100”. In *EDAL* 1004–05 Mo. **ǯaγun* “100” was added and the reconstruction modified to **ńằmò*.

41.2. The Japanese word suggests an original reduplication or a shortened hypothetical compound **mworo-mwo* “all *tens”, cf. OJp. *mworo* “all, every” (*EDAL* 906). The second component should correspond to Even **mïan* “10”, pl. **mïar*. The hypothetical form **mïan-mïar* “ten tens” could have transformed into NTg. **ńamā-*, perhaps via metathesis **mïan*^{o} > **ńam*^{o}, cf. Manchu *niaman* “heart” < Tg. **mïańan-* (*TMS* I, 533–534; *EDAL* 928). See §65.2.

Note$_1$: Formally Mo. **nayiman* “8” could perhaps also be added, although the difference in semantics remains puzzling (cf. the similarity of the numerals “8” and “100” in Sino-Tibetan).

Note$_2$: An unexpected, suggestive, but probably unrelated parallel appears in South Saamic dialects, where *n’imme*, *n’ümme* etc. denotates “100”. Its etymology is apparent: Uralic **nimi* “name” (Finnish *nimi*, Hungarian *név* etc. – see Honti 1993, 149).

42. STg. **taŋgū* “100”.

The numeral is very probably derived from the verb **taŋ-* “to read, count”, cf. Evenki *taŋū* “number”; Manchu *taŋgu* means both “100” and “quantity” (*TMS* II, 161–163). Nivkh (Amur) *r‘aŋga* “much, many”, *ń-r‘aŋq* “one hundred” is undoubtedly a borrowing from South Tungusic (Bouda 1960, 402). The comparison with OJp. *tamura* “group, crowd” (*EDAL* 1401) is not convincing.

8.3.4. Comments on the Tungusic numerals

Tungusic numerals seen from both the genetic and areal perspectives may serve as a laboratory example of various kinds of relations, reflected in different strata:

A. Deep genetic relationship: pTg. **ämün* “1” | WrMo. *emüne* “front, south; facing; before” | OJp. *ömö* “face” (Ramstedt 1907, 5; Murayama 1958, 229); pTg. **ǯöwär* “ 2” | pMon. **ǯuir-in* | OKor. **dubɨl* “2” | OBulg. *tvirem* “second”, Chuvash *tebər(ew)*

id. (Blažek 2013, 161–62; Mudrak 2005, 98); pTg. **duj-gin* “4” | pMon. **dör-ben* | pTk. **dȫ̄rt* | OJp. *yö-* id. (*EDAL* 1377–78); pTg. **tuańŋia* “5” = **tawu(n)-* + **ńiŋi-* “all fingers” | pMon. **tawu-[γa]n* “5”; pTg. **ǯuwan* “10” | pMon. **ǯaγun* or **ǯawun* “100” (Blažek 1999, 120–27).

B. Internal etymology: pTg. ?**ńiŋ-gün* “6” = “a finger more” : **ńiŋi* “finger”; **ǯïab-kun* “8” = “two minus” : **aba* “no, not”; ?**xüńiä-gin* “9” : **xuńakān* “finger” (Blažek 1999, 123–26).

C. Intra-Tungusic borrowing: “50” in Nanai *sosi*, Ulchi *sʉsai* from Manchu *susaj* “50” with respect to *sunǯa* “5” vs. Ulchi *tʉńǯa*, Nanai *tojŋga* “5”.

D. Substratal influences: Tg. **jül(e)lan* “3” : Yukaghir *jalo-* “3” ||| Eskimo (Mackenzie R.) *illaˑk* “the third”; Tg. ?**ńiŋ-gün* “6”; **nadan* “7”; ?**xüńiä-gin* “9” < Čukčo-Koryak **ənnœn-məlləŋen* “6” = “1” + “5” (cf. Koryak near Karaga Isl. *nun-malan* “6”); **ŋiðœq/ŋ-məlləŋen* “7” = “2” + “5” (cf. Koryak by Pallas *nyettan-myllaŋa* “7”); **qon-Rajcəŋ-ken* “9” = “1 lying down – associated with” (cf. Čukči by Bogoras *qonyá-čyŋken* “9”); see Blažek 1999, 121–26; Fortescue 2005, 183, 197, 237, 345.

E. Mongolic origin:

“15” in Nanai, Hezhen (via Jurchen *tobuxwan* or Manchu *tofoxon*)

“20” in Udihe, Negidal, Orok (via Jurchen *horin* or Manchu *orin*).

“20”/”30” in Oroč (via Jurchen *horin*, *gucîn*, or Manchu *orin*, *gusin*).

“20”/”30” in some Evenki dialects (via Jurchen or Manchu as Oroč), plus “40” directly borrowed from Khamnigan Mongol *ducin* or similar source (cf. also Even *ʒūcī* “40th”).

“20”/”30”/”40” in Hezhen, Nanai, Ulča (probably mediated by Jurchen *horin*, *gucîn*, *dexi*, or Manchu *orin*, *gusin*, *dexi* – cf. Doerfer 1985, 78–79, 81).

“20”/”30”/”40”/”90” in Solon, Oroqen (probably mediated by Jurchen *horin*, *gucîn*, *dexi*, *hujehunǯu*, or Manchu *orin*, *gusin*, *dexi*, *ujunǯu*).

“15”/”20”/”30”/”40” in Manchu, Xibe.

“12”/”13”/”14”/”15”/”17”/”18”/”20”/”30”/”40” in Jurchen (cf. Janhunen 1993).

Numeral systems in which no numerals are borrowed from Mongolic are attested only in the northernmost Tungusic language Even and some Evenki dialects.

8.4. Koreanic numerals

8.4.1. Survey of forms of the Koreanic numerals

	1	2	3	4	5	6	7	8	9	10
Modern Korean	하나 *hana*	둘 *tul*	셋 *set*	넷 *net*	다섯 *tasŏt*	여섯 *yŏsŏt*	일곱 *ilgop*	여덟 *yŏdŏl*	아홉 *ahop*	열 *yŏl*
Jejueo	*hana*	*tul/tui*	*šit/šwit/ səi*	*nwit/ nəi*	*tasʌt*˥	*jʌsʌt*˥	*ilgop*˥	*jʌdʌp*˥	*aop*˥	*jəl*
LMKor.$_1$	*hʌnah*	[2]*tul/*[2]*tulh*	*sŏih*	[2]*nŏi/* [2]*no*	*ta*[1]*sʌs, ta*[1]*sŭs, ta*[1]*sʌt*	‘*yŏ*[1]*sŭs*	*nil*[l]*kup, nil*[l]*kup*	‘*yŏ*[1]*tŭlp*	‘*a*[1]*hop*	[1]’*yŏlh*, [1]*yŏl*
LMKor.$_2$	*hănnah*	*turh*	*səyh*	*nəyh*	*tasăs*	‘*yəsĭs*	*nirkup*	‘*yətĭrp*	‘*ahop*	‘*yərh*
LMKor.$_3$	*hònáh*	*:twulh*	*:seyh*	*:neyh*	*tàsós*	*yèsús*	*nìlkwúp*	*yètúlp*	*àhwóp*	*yélh*
LMKor.$_4$	*honah*	*twulh*	*seyh*	*neyh*	*tasos*	*yesus*	*nilkwup*	*yetulp*	*ahwop*	*yelh*
Nichūreki	*katana*	*tufuri*	*sawi*[4]	*towi*[3]	*hasusu*[6]	*esusu*[5]	*tirikuni*[8]	*etari*[9]		*etu*
Kyeylim [#]	河屯 [19]	途孛 [20]	洒 [21]	迺 [22]	打成 [23]	逸成 [24]	一急 [25]	逸答 [26]	鴉好 [27]	噎 [28]
LMCh r.	**xɦatɦun*	**tɦuə̆pɦut*	**ʂa:j’*	**naj*	**ta:jŋ‘+ ʂiə̆`/’ʂyə̆`*	**jit + ʂiə̆`/ʂyə̆`*	**ʔjitkip*	**jittap*	**ʔja:+ xaw’*	**ʔjiat*
EMCh r.	**ɣadwan*	**dɔbɐt*	**ʂɑij’/*ʂɛ:j’*	**nəj’*	**tajŋ’ɛuə̆*	**jitɛuə̆`*	**ʔjitkip*	**jit + təp/ tap*	**ʔɑi/ʔɛ: + xaw’*	**ʔɛt*
EMKor.	**xatun*	**twupulh*	**seyih*	**neyh*	**taNswoH*	**yĕlswoH*	**ilkŭp*	**yĕltŭp*	**axob*	**yel[h]*
OKor.: c.	一等	二尸	悉 //史							
Silla	**hotan*[V] **hʌdʌn*[L]	**tŭpəl*[N] **dubil*[L]	**sir/sit*[W] // **sʌ/sriX*[W]							
OKor.: o.	坐伽第巳	矣毛巳	新台巳		刀士巳		日古巳 二▣口巳	今毛巳 以如巳 3十		
MCh. r.	**dzwa-gɪadeip*	**ɦiĕitərĭĕp*	**sayt‘ʌip*		**taudzĭĕp*		**ɲĕtkop *ɲĕi▣ + k‘əup*	**..tərĭĕp *jĕitəp (agʌy)*		
Baekje	**dzwa-gadəp*	**itərip*	**saydʌp*		**dasip*		**nilgop *ni[l]gup*	**yətərip *yətəp-agʌy*		
pKorean	**xatun*	**tuwir*	**serik*	**nerki*	**taNsw*^{o} < **ta-swon*	**yŏr-sur-us*	**nir-kup*	**yer-tuwir*	**axob* < **ăw-hwon/l op[un]*	**yer[u]h* < **yer-turh*

Notes: c = cardinal numeral; o = ordinal numeral, expressing the order of the day in a month; r. = reading. The symbol ▣ represents an unknown sign of unknown reading.
Abbreviations of authors: L = Lee 2012, 40, 54; N = Nam 2012, 62; V = Vovin 2010, 220; W = Whitman 2015, 422–23.

	20	30	40	50	60	70	80	90	100	1000
Modern Korean	스물 *sŭmul*	서른 *sŏrŭn*	마흔 *mahŭn*	쉰 *shwin*	예순 *yesun*	일흔 *irhŭn*	여든 *yŏdŭn*	아흔 *ahŭn*	온 ***paek***	즈믄 *čŭmŭn*
Jejueo	*sumul*	*səlhin / səllun*	*main*	*šwin / šwiin*	*ješwin*	*irʉn / illin*	*jʌdin*	*ain*	***pɛk***	
LMKor.$_1$	[1]*sŭ*[1]*mŭl*	*syŏl*[1]*hŭn*	*ma*[1]*zʌn*	[2]*suin*	*'yŏ*[2]*suin*	*nil*[1]*hŭn*	*'yŏ*[1]*tŭn / 'yŏ*[1]*tʌn*	*'a*[1]*hʌn*	[1]*'on*	
LMKor.$_2$	*sïmïr*	*syərhïn*	*mazăn*	*suyn*	*'yəsyuyn*	*nirhïn*	*'yətïn*	*'ahan*	*'on*	
LMKor.$_3$	*súmúl*	*syèlhún*	*màzón*	*:swuyn*	*yè:sywuyn*	*nìlhún*	*yètún*	*àhón*		
LMKor.$_4$	*sumulh*	*syelhun*	*mazon*	*swuyn*	*yesywuyn*	*nilhun*	*yetun*	*ahon*	*won*	*cumun*
Kyeylim #	成沒 [29]	實涅 [30]	麻刃[31]	舜 [32]	逸舜 [33]	一妠 [34]	逸頓 [35]	鴉訓 [36]	醞 [37]	千日千[38]
LMCh. r.	**ʂiə̌`/ʂyə̌` + mut*	**ʂɦit+ xɦuaŋ*	**ma:rin`*	**ʂyn`*	**jitʂyn`*	**ʔjityn*	**jittun`*	**ʔja:xyn`*	**ʔyn`*	
EMCh.R.	**ɕuə̌`mət*	**ʑitywaŋ*	**mai/mɛ:+ɲinʰ*	**ɕwinʰ*	**jitɕwinʰ*	**ʔjitwun*	**jittwənʰ*	**ʔai/ʔɛ:+xunʰ*	**ʔunʰ*	
EMKor.	**swoHmŭl*	**syĕlxun*	**ma[ńź]tün*	**swuyn*	**yĕlswuyn*	**il[h]on*	**yĕltun*	**axon*	**on*	
OKor.										千隱
Silla										**čɔ̈mɔ̈nᴺ
pKorean	**tu-son-mul*	**serki-yerh-son*	**man/r-son*	**swoN-son*	**yŏr-sur-son*	**nir-kup-son*	**yer-tu-son*	**axob-son*	**on*	

Abbreviations of authors: N = Nam 2012, 62.

8.4.2. Sources of the Koreanic numerals

Baekje: Lee 2012. **EMCh.R.:** Early Middle Chinese reconstruction of Early Middle Korean (Pulleyblank 1991). **EMKor.:** *Kyeylim yusa Kolye pangen = Jilin leishi*, 1103 CE (Sasse 1976: #19–#34; Blažek 2013: 160–67). **Jejueo:** Changyong Yang & William O'Grady, 2014/<https://mpi-lingweb.shh.mpg.de/numeral/Korean-Jejueo.htm>. ***Kyeylim*:** see EMKor. **LMCh.R.:** Late Middle Chinese reconstruction of Early Middle Korean by Pulleyblank 1991. **LMKor.$_1$:** Sasse 1976: 100–01. **LMKor.$_2$:** Lee 1977: 174. **LMKor.$_3$:** Vovin 2010: 220–21. **LMKor.$_4$:** Lee & Ramsey 2011: 74, 81, 99, 236. **MCh.:** Middle Chinese reconstructions by Lee SeungJae 2012. ***Nichūreki*:** Lee 1977: 101–02; Lee & Ramsey 2011: 81. **OKor.**: Lee 2012; Nam 2012; Vovin 2010; Whitman 2015.

8.4.3. Comparative-etymological analysis of the Koreanic numerals

43. LMKor. *hònáh* "1"

The EMKor. 河屯 form is reconstructed as **xatun* (Vovin 2010, 187) = /**hadun*/ (Lee, SeungJae 2012, 40); OKor.: Silla (*Hyangka*, i.e. "Songs of the Country", VII: 6,8; XI: 7) 一等 *HAton* (Vovin 2010, 187; 1995, 227: acc. *HOten-γïl*) = **hɔtɔn* (Nam 2012, 62) = /**hʌdʌn*/ (Lee, SeungJae 2012, 40) < **hotan* (Vovin 2010, 220). The same base appears in the form *katana* "1", recorded in the Japanese chronicle *Nichūreki*[156] (Lee

156 *Nichūreki* (二中歷) is the lexicon of folk culture (*c*. 1210–1221), originating as a compilation of two older works, *Shōchūreki* (掌中歷) and *Kaichūreki* (懷中歷), dated to c. 1120.

& Ramsey 2011, 81). Lee & Ramsey (2011, 74) also mention LMKor. *holo* “one day” (= *hʌrʌ* by Lee & Ramsey, *l.c.*) < **holol* < **hotol*, where the latter component **ol* (or **ul* in *ithul* “two days”, *yelhul* “ten days”) is a variant of MKor. *il* “day”. Another compound appears in Kor. *harɨp* “yearling, one-year-old cow”, derivable from the protoform /**hʌdʌp/*, which was also identified in the Old Korean (Baekje) compound **dzwa-gadəp* “the first day of month” – see Lee SeungJae (2012, 37). The roots of OKor. **-gad-əp* and **hʌd-ʌp* are compatible, including the suffix *-əp / -ʌp* with ordinal function (Lee SeungJae 2012, 41, 49).

43.1. An external cognate may be found in OJp. *kata* “one (of a pair of set), single (member of a pair of set)” (Martin 1987, 442; Street 1985, 641: **kalta* “half”; cf. *EDAL* I, 637; Francis-Ratte 2016, 336: MKor. *kech* “exterior”). Hypothetical parallels outside of Altaic mean “2”: Čukčo-Kamčatkan: Itelmen of the Tigil River *katxan*, West Itelmen *kasx* “2”; Yukaghir: Omok *tkit* “2”, *kit kimnel* “20”; Uralic *kektä* “2”, maybe from **ketV* “2” + dual. suffix **-kä* (Blažek 1999, 91: Jp.+Ur.+Omok+Itelmen).

43.2. Francis-Ratte (2016, 442) connects LMKor. *hònáh* “1” with OJp. *kazu* “1; number,’ *kane-* “makes into one” *kanap-* “it becomes one”.

44. LMKor. *:twulh* “2”
EMKor. 途孛 **twupulh* (Vovin 2010, 220) = **twupul/*twuWul* (Lee & Ramsey 2011, 74) < OKor. (Silla; attested in the Song of Cheoyong) **dubɨl* id. (Lee SeungJae 2012, 54) ~ 二尸 *TWUɣ̈l* “2” [Silla Hyangka 7:2], 二肹 *Tuɣ̈r* [Silla Hyangka 5:5,6 – 6th-9th cent.] (Vovin 2017). If OKor. (Baekje) **itərɨp* “second” and modern forms as e.g. Hambuk dial. *idɨlbi* “two-year-old cow” are compounds, where the first component is the deictic prefix, cf. LMKor. *i* “this” (Lee & Ramsey 2011, 182; cf. Martin 1992, 556: *icey*, *i cey* “(at) this time”; Ramstedt 1949, 19: *ipčak* “this side” vs. MKor. *pčàk* “one of the pair”), it is tempting to think about the etymological equivalence of Silla **dubɨl* and Baekje **-tərɨp*, in principle differing only in order of the labial and liquid. The same base appears in the form *tufuri* “2”, recorded in the Japanese chronicle *Nichūreki* (Lee & Ramsey 2011, 81).

44.1. External cognates: OJp. *ture* “companion” (Martin 1966, 245) || Tg. **ǯöwär* “2” || Mo. **ǯiwrin* ~ **ǯuirin* “2” (f.); “pair” || Tk.: OBulg. *tvirem* “second”, Čuvaš *tebər*, *tebərew* id. (Mudrak 2005, 98: association with *pər* “one”; Egorov 1964, 243: *tata pər* “still one”; see *EDAL* I, 1374–75).
44.2. Francis-Ratte (2016, 444) proposed a rather strange comparison with OJp. *towo* “10”, interpreting is as *”double (hand)”.

45. LMKor. *:seyh* “3”
EMKor. 洒 **seyih* (Blažek 2013, 160, 162). OKor. (Baekje) **sayd-ʌp* “3rd” (Lee SeungJae 2012, 37), besides the phonograms 悉 *sir/sit* and 史 *sʌ/sriX*, recorded in *Samkwuk*

saki and glossed as “3” (Whitman 2015, 422). The same numeral probably appears in the form *sawi* *”3”, recorded in the Japanese chronicle *Nichūreki* as “4” (Lee & Ramsey 2011, 81). Vovin (2010, 180–81) adds the MKor. bound forms *:se-*, *:sek-*, *:sey-* (extended by classifiers), deriving all via metathesis from **seki*. He sees a probable Korean loan in OWJp. *sakî-* in the compound *sakî-kusa* “grass-plant”, lit. “three-grass”, cf. the sematographic spelling 三草. But with respect to Kor. *sarip* “in the third year (of animal)” it is possible to reconstruct **serik*, although *-r-* may be a lenited allophone of *-*t-* and cannot be evidence for reconstructing *-*r-* in Proto-Korean (Miyake, p.c.). However, the external parallels support *-*r-*: Manchu *sertei* “threefold, triple” and Mongolic **serege* “trident” (Ramstedt 1949, 225; cf. also *EDAL* II, 1225), plus Turkic **sek(k)iř* “8” (§8.2.).

46. LMKor. *:neyh* “4”
EMKor. 迺 **neyh* (Blažek 2013, 160, 162).

46.1. With respect to the bound forms *:ne-*, *:nek-* (extended by classifiers) Vovin (2010, 211) assumes metathesis and reconstructs **neki*. With regard to Kor. *narip* “in the fourth year (of animal)” it is probable to modify the reconstruction into **nerki*. The form *towi* “3”, corr. “4”, recorded in the Japanese chronicle from the *Nichūreki* chronicle (see Rahder 1941, 641–42; Lee 1977, 101–02), is more probably a mistaken record of expected **nowi* “4”, the same as in *tirikuni* “8”, corr. “7”, corresponding to LMKor. *nìlkwúp*, OKor. (Baekje) **nilgop/*ni[l]gup* “7”.

External comparisons: Kho (1975, 108) connected it with Fenno-Ugric **ńeljä* “4”. Menges (1975, 92) added Dravidian **nāl* “4”.

46.2. PKor. **nerki* could have been adopted from a substratal source of the type Čukčo-Kamčatkan **ŋəraq* “4” (Fortescue 2005, 202). Cf. also Nivkh *ny-*/*nu-* “4”, *mi-nr* “8” = “2” x “4” (see Bouda 1960, 358).

47. LMKor. *tàsós* “5”
EMKor. 打成 **taNswoH*[157] (Blažek 2013, 160, 162–63). Martin (1996, 55) reconstructs **ta·s[h]os*, separating the same suffix *-$^{o}/_{u}$*s* as in the numeral *yèsús* “6” < **yes[h]us* with the nominalizing-adverbial function, cf. MKor. ‘’*twols* “(cyclical) year” < **two·lo-s* “that which turns”, derivable from the verb ‘’*two(l)-/*‘’*twolo-* “to turn (around)” or *ku·lus* “by mistake; a mistake” from *kulG-/kulu-* “to be wrong” (Martin 1996, 36, 38, 50). Vovin (2010) does not offer any deeper reconstruction of this numeral, but his derivation of the following numeral “6”, i.e. MKor. *yèsús* in his transcription or *ye·sus* after Martin, from **yonsus* to explain absence of lenition (Vovin 2010, 14, 220), is applicable to “five” too, giving the protoform **tansos* “5”, confirmed by reconstruction of EMKor. **taNswoH*. The internal reconstruction could be deeper, assuming metathesis *-*ns-* > *-*sn-* and syn-

157 打成. The same character 成 *shù* appears in transcription of the EMKor. numeral 成沒 “20”.

cope of *-*u*-: **ta-sn-os* < **ta-son-os*, interpretable as "of whole hand" or "all [fingers] of the hand", cf. MKor. "*ta* "all" and *swon* "hand" (Martin 1996, 30, 37; 43, 44). Ramstedt (1949, 259) thought about a compound with the same second component, while in the first member he saw the Korean verb *tat-tta* "to close", hence "5" = "closed hand". The proposed primary semantics "whole hand" or "all [fingers] of the hand" corresponds to Tungusic **tuańŋia* "5" < **tawun*- "all, every; number" & **ńiŋi* "finger", i.e. "all fingers" (*TMS* I, 639; II, 214; Blažek 1999, 122–23).

Note: There are also other suffixes *-p* and *-m*, probably with ordinal function: OKor. **dasip*, corresponding to Kor. *dasɨp* "five-year-old cow", similarly Kor. *yəsɨp* "six-year-old cow", and *dasim* "5th", *yəsim* "6th" in the Gugyeol texts (Lee SeungJae 2012, 37–38; 49–50).

48. LMKor. *yèsús* "6"

EMKor. 逸戍 **yělswoH* (Blažek 2013, 160, 163).

48.1. Martin (1996, 55) derives MKor. *yèsús* from **yes[h]us*, but Vovin (2010, 14, 220) rejets it and offers his starting point **yonsus* with **-o*-. It is apparent that **tansos* "5" and **yonsus* "6" represent compounds with more or less identical latter components, derivable from **son-*$^{o}/_{u}$*s* "of hand, in hand". The first component was connected with Kor. *yŏlda* "to open (up); be off (of lid, top)" already by Ramstedt (1949, 77), hence "6" = "being off the hand"? The development **yŏl-son-us* > **yolsnus* > **yolnsus* > **yonsus* or **yolsus* is probably quite regular (cf. Vovin 2010, 220 about elimination of such clusters as *-nts*-, *-lts*-, *-hs*- etc.). EMKor. **yělswoH* supports the presence of the liquid in the numeral.

48.2. In this perspective it is also possible to think about an alternative solution based on NKor. *sur* "finger" (Ramstedt 1949, 245), i.e. **yŏl-suL-us* > **yolLsus* > **yolsus*. The hypothetical meaning *"open finger" = "6" corresponds in semantics with Tungusic **ńiŋ-gün* "6" = *"finger more", analyzable as **ńiŋi* "finger" (*TMS* I, 639) & the suffix, attested e.g. in Ewenki *bi-kūn* "I [am] great" (Blažek 1999, 123).

49. LMKor. *nìlkwúp* "7"

EMKor. 一急 **ilküp* (Blažek 2013, 160, 163–64); OKor. (Baekje) **nilgop* (Lee SeungJae). It seems it is a compound, where the first component is derivable from the verb attested in MKor. ''*ni(l)-/ni·l[*$^{o}/_{u}$*]*- "to arise, get up" (Martin 1996, 76), Kor. *ilda* "to get up, arise" (Ramstedt 1949, 69, 168), and the second one is compatible with MKor. *kwop*- "to double; to get double" (Francis-Ratte 2016, 449: "to multiply"). The difference in vocalism of the second component is probably analogous to the homonym *kwop*- "to be bent", *kwup*- "to bend; be/get bent", *kwo·pi & kwo·pi* "bend" (Martin 1996, 24, 53). Vovin (2010, 144) derives MKor. *kwòp*- "to double, increase twofold" from PKor. **kwònpó*- with respect to a non-leniting *-p*- and rejects Whitman's comparison with

OJp. *kupapë-* “to add” whose *-p-* does not correspond to PKor. **-np-*. Ramstedt (1949, 124) compared Korean *kop* “so much again, (so many) times”, *kop-čǰęl* “as much again, the double” with such Siberian Turkic forms as Karagas *kof-adeš* “both hands, double handful”, Yakut *kopytys* id., where *adyš & ytys* respectively mean “handful”. The Korean numeral should originally mean *”raised double {of fingers}”.

50. LMKor. *yètúlp* “8”

EMKor. 逸答 **yěltŭp* (Blažek 2013, 160, 164). OKor. (Baekje) **yətərip* (Lee SeungJae). Cf. also Kor. *yədilp* “eight-year-old cow” with the ordinal suffix *-p*. Vovin (2010, 25, 219–21) derives the numeral from **yel-twulp*, where the absence of lenition indicates the internal cluster **-lt-* or **-nt-*, consisting of (MKor.) *yélh* “10” (minus) EMKor. **twupul* “2”. Miyake (p.c.) explains the metathesis ^{o}*pul* > ^{o}*pl* > ^{o}*lp* by press of the neighboring numerals *nìlkwúp* “7” and *àhwóp* “9” with the same final *-p*.

51. LMKor. *àhwóp* “9”

EMKor. 鴉好 **axob* (Blažek 2013, 160, 164). None of etymologies proposed till the present time are satisfactory enough to be accepted:

51.1. Ramstedt (1949, 77) saw here a compound consisting of NKor. *a* “child” & Kor. *kop-* “to be bent”, hence “the child (= little finger) bent”. Junker (1953, 306) mentioned that in this case the result would be $^{+}$*agop*. Miyake (p.c.) adds that the Sino-Korean bound morpheme 兒 “child” was pronounced *zʌ* in Late Middle Korean, implying $^{+}$*zʌhop* “9”. The change of *zʌ* to *a* occurred between Late Middle Korean and Modern Korean. So Ramstedt’s *a* is an anachronism.

51.2. Miller (1971, 244) reconstructed the compound **yər-hăn-əp* *”ten-one-lacking”. But this solution does not explain the initial *a-* instead of expected $^{+}$*ye-*, preserved in the preceding numeral of analogous structure.

51.3. Perhaps a compound consisting of the following four components offers a solution:

(i) MKor. *a·ni* “is not” (Martin 1996, 13, 87).

(ii) Kor. *āida* “to be robbed, despoiled, outdone” (Ramstedt 1982, 17: **āw-* *”wegnehmen”).

(iii) LMKor. **hwon*^{o} reconstructed according to LMKor. *hwon·ca* (1518), *howon·za* (1475), besides *howo·za* < *hoWo·za* “alone” < **hon ‘po(l) ‘sa* “just one layer” (Martin 1996, 53), or LMKor. *hwoul* “single”, besides *howol* id. (Lee & Ramsey 2011, 159).

(iv) NKor. *obun* “all, whole, entire” (Ramstedt 1949, 177).

In sum, the numeral may be interpreted as

**an(i)* + **hwon/l*^{o} + **op[un]* “not alone/single of all [ten]” or

**an(i)* + **hwon/l*^{o} + **āw*^{o} “without single taken off”.

The second solution operates with **w*, supporting so the Middle Chinese reading of the character 好 as **xaw'*, **xa̋w*, **xawX* by Pulleyblank, Starostin and Baxter & Sagart respectively. It could be a result of intervocalic lenition of **-p-*, while the final *-p* has been preserved (Lee & Ramsey 2011, 137–8). Cf. also the preceding numerals "7", "8" in *-p*.

52. LMKor. *yélh* "10"

EMKor. 噎 **yel[h]* (Blažek 2013, 160, 164). Vovin (2010, 220) derives MKor. *yélh* from **yel[u]h*. Miyake (p.c.) mentions the Japanese *kana* transcription *etu* from the chronicle *Nichūreki*, which should imply the presence of **t* in the numeral. It is tempting to speculate about the compound with the Kor. postnoun *tolh*, *tulh*, *thul* "group of" (Martin 1992, 818), namely **yel-tulh* "group of ten", also explaining the final *-h*. Remarkable is the reverse relation between MKor. *yélh* "10" & *wón* "100" and Tk. **ōn* "10" & **ʒ́ūř* "100". It is understandable, if "100" = "all tens" and "10" = "all fingers", cf. Kor. *ōn* "all, whole, entire"; Turkic: Teleut *ončo* "all, plentifull" (Ramstedt 1949, 177). Other relatives may be found in Mongolic **yersün* "9", **yerin* "90", **yerü* "the most of ..."; WOJp. *yöröNtu*, MJp. *yorodu* "10.000; a large number" (Blažek 1999, 131). Vovin (2010, 218) rejects a relationship with MKor. *yèléh* "a large number; many".

53. LMKor. *súmúl* "20"

EMKor. 成沒 **swoHmŭl* (Blažek 2013, 160, 165). There have been several attempts to explain this numeral.

53.1. Ramstedt (1949, 238) compared it with Manchu *simχuń* ~ *šumχuń* "the fingers and toes (of man)" (Zaxarov 1875, 612, 688), but it is derived from Tungusic **šimučken* "small finger" (*TMS* II, 395), comparable with Turkic **čimič-* "small finger" (*EDAL* II, 1329).

53.2. Alternatively Ramstedt (1949, 153) thought about a compoud of Sino-Korean *šip* (in his transcription *sip*) "10" and *mul*, the numerative of gathering of fruit etc., cf. LMKor. *mwúl* "group. crowd" (Lee & Ramsey 2011, 189). Miyake (p.c.) adds that the shift of Sino-Korean *šip* to *su* would be without precedent.

53.3. Krippes (1991, 149) proposed proto-Silla **tubur* "2" vs. $^{+}$*tumur-on* "20", but without any explanation of the change $^{+}$*t-* > *s-*.

53.4. Miller (1996, 145) connected *-múl* (in his transcription *-mŭl.h*) with Kor. *mŭs* "(a bundle of) ten (sheaves, fish, etc.); a plot of land from which ten sheaves of tax-grain are collected", and added Turkic **-mïl*$_2$, forming the numerals "60" & "70" (reconstructed by Mudrak as **alt-bił*, **ʒ́et-bił* respectively). But Miller also did not explain the initial *s-* in the Korean numeral "20" with respect to *t-* in MKor. *:twulh* "2".

None of these solutions is satisfactory, so a new solution should be sought.

53.5. A hypothetical compound **swon-twupul* "10 x 2" through **sun-twul* or **sun-pul* could perhaps give **sumul*, but the change **-ntw-* or **-np-* > **-m-* is not verified. And the order "10" followed by "2" would also be exceptional, cf. the pattern "2 x 10" recognizible in Sino-Korean *išip* "20", Modern Chinese *èrshí*, Old Japanese *pata-* "20" : *puta-* "2", Tungusic **ǯöwär-ǯuwan/r* or **ǯöwär-mïar* "20" = "2 x 10" etc.

53.6. Perhaps it is more promising to propose a primary compound **twu-son-mul* "2 x 10" (with the numerative *mul* – see b) > **tusomul* > **tsomul* > **sumul*. The syncope in the first syllable is typical in early Middle Korean period, cf. MKor. '*ptulh* "garden", with respect to the dialect form *ttulak* from **putuluk* (Martin 1996, 36; Lee & Ramsey 2011, 67: ... after the twelfth century, most initial consonant clusters were created; p. 90: EMKor. [*Kyeylim*] **potol* > **ptol* > LMKor. *stol* "daughter" > Kor. *ttol*). Miyake (p.c.) correctly asks, why **ts-* would not fuse in *c-* as in EMKor. **tsa^{h}* > LMKor. *cah* "ruler" (Lee & Ramsey 2011, 86). The reason may be alliteration with the following numerals in *s-*, *syèlhún* "30", *:swuyn* "50".

53.7. In *Kyeylim* the numeral "5" and "20" are written by the same character 戍, used in the second and first position respectively. If it is correctly identified with MKor. *swon* "hand", in the hypothetical compound **son-mul* "20" one would expect the meaning "4" of the latter component. This is really one of the possible functions of the first component **mal-* of the numeral "40". Miyake (p.c.) would expect here more likely MKor. °*mol* than °*mul*, but it is explainable via association with the numerative *mul* (§53.2.). A similar structure of the numerals "20" and "200" may be found in Baškir *dört beš* "20" = "4 x 5" and *qьrqtьn ucu* "200" = "40 pentads" (Gordlevskij 1945, 141–42).

54. LMKor. *syèlhún* "30"

EMKor. 實湟 **syělxun* (Blažek 2012, 160, 165–66).

54.1. Vovin (2010, 221) reconstructs **s-yèlh-són* < **:se-yélh-són* < **sèkí-yélh-són*. His solution is convincing from the point of view of historical phonetics, but it remains to explain the semantics. If the second component was the numeral "10", the final formation would be semantically redundant: "3x10x10"!

54.2. A promising alternative solution may be found in MKor. *yèléh* "a large number, many" (Vovin 2010, 218 separates it from MKor. *yélh* "10"). The final compound would mean "three multiples of **són*" = "3 x 10".

54.3. Francis-Ratte (2016, 450) sees here a compound of pre-MKor. **so* "10" + *yeléh* "many", where "many tens" became lexicalized as a word for "30".

55. LMKor. *màzón* "40"

EMKor. 麻刃 **ma[ńź]ün* (Blažek 2013, 160, 166).

55.1. Vovin (2010, 221) derives MKor. *màzón* from **mà-són* < **nà-són* < **nè-són* to connect the numerals "40" and "4", but without explanation of the irregular change *m-* < *n-*.

55.2. In his older study (Vovin 1993b) he thought that in the 15th cent. the MKorean sign ㅿ was read as *ñ* in the medial position, thus changing the reading of the numeral "40" to *mañon*. He sought support in reading of its EMKor. [*Kyeylim* #31] counterpart as *mae.nyin* (Vovin 1993b, 248, 255). But he himself wrote about the change *ñ* > *ńź*, originating in the capital Cháng-an of the Tang dynasty (Vovin 1993b, 255), and spreading further during the Song dynasty (Lee & Ramsey 2011, 139).

55.3. Lee & Ramsey (2011, 90–91) explain MKor. *-z-* from the cluster **-ls-*, cf. *phuzeli* "overgrown land", consisting of *phul* "grass" & *seli* "midst".

But none of the hypothetical reinterpretations of the reading, namely **mañon & mae.nyin*, **mańźin*, **malson*, are compatible with the numeral "4", attested as MKor. *:neyh* < **neki* (Vovin 2010, 211). In this case there are the following possibilities:

55.4. Alternative numeral "4", concretely maybe **-mul* identified in the numeral "20" – see above.

55.5. Motivation inspired by a non-numerical word. Here it is possible to think about some of Korean words expressing an uncertain quantity, e.g. Kor. *mān* "size, amount, number", besides *mānhi* "many, much" (Ramstedt 1982, 105–06; Martin 1966, 249 & 1996, 105: MKor. adv. "*man h-i*), or MKor. '*mal* "measure" (Ramstedt 1949, 138; Martin 1966, 236; 1996, 45); alternatively also about Tungusic **maluxan/*malaxun* "many, much, quantity" with Nivkh *malγo-ď* "to be numerous" (*TMS* I, 524). On the semantic equation "40" = "many" in Turkic languages – see Gordlevskij 1945, 144.

55.6. Foreign origin of the numeral "40" (cf. Russian *sórok* "40" < Greek τεσσαράκοντα id.). In the second case, in neighboring languages there is no similar word designating "4" or "40", perhaps with exception of Nivkh *ń-mar-i* "one quarter" (it is remarkable that the most archaic form of the numeral "4" in Ainu, corresponding to Austric counterparts, was identified in the word "quarter" – see Vovin 1993a, 127). It is not excluded that the same numeral might be identified in *minr* "8", if it was dissimilated from **mi-mr*, where **mi = me* "2" (otherwise Bouda 1960, 358; see Blažek 1999, 92, 130). In some Sino-Tibetan languages, there are also forms of the numeral "4" consisting of *m-* & liquid: Jingpho *məli*, Khoirao *malhi*, Meithei *mari*, Puiron *mali* (Matisoff 1997, 73), but their geographical distance from the Korean Peninsula is too big. Hypothetically, in Northwest China the Middle Chinese language could have assimilated a hypothetical Sino-Tibetan language characterised by a similar feature, but this is too speculative.

56. LMKor. *:swuyn* “50”

EMKor. 舜 **swuyn* (Blažek 2013, 160, 167). Vovin (2010, 221) derives it from **swùy-ón* < **swùy-zón* < **swùy-són*. The first component should be connected with the numeral “5”.

57. LMKor. *yè:sywuyn* “60”

EMKor. 逸舜 **yělswuyn* (Blažek 2013, 160, 167; cf. Francis-Ratte 2016, 448: LMKor. *yè:sywuyn* “60” = **yel-* “10” + *:swuyn* “50”). Vovin (2010, 221) reconstructs **yèsywùy-ón* < **yèsywùy-zón* < **yòsywùy-són*. The first component should be connected with the numeral “6”.

58. LMKor. *nìlhún* “70”

EMKor. 一妠 **il[h]on* (Blažek 2013, 160, 167). Vovin (2010, 221) derives it from **nìl-hón* < **nìl-són*. The first component should be connected with the numeral “7”.

59. LMKor. *yètún* “80”

EMKor. 逸頓 **yěltun* (Blažek 2013, 160, 167). Vovin (2010, 221) derives it from **yèt-ón* < **yèlt-ón* < **yòlt-són*. The EMKor. reconstruction **yěltun* supports the mid member of Vovin’s equation.

60. LMKor. *àhón* “90”

EMKor. 鴉訓 **axon* (Blažek 2013, 160, 167). Vovin (2010, 221) derives it from **àh-són*. This reconstruction would be supported only by pre-Middle Chinese reading of the character 訓, beginning of Postclassic Chinese **śwìn* (Starostin). For Middle Chinese the reconstructed readings are **xyn’*/**xun^{h}*, **xǜn*, **xjwən*, **xjunH* by Pulleyblank, Starostin, Schuessler and Baxter & Sagart respectively.

61. LMKor. *wón* “100”

EMKor. 醞 **on* (Blažek 2013, 160, 168).

61.1. Remarkable is the reverse relation between MKor. *yélh* “10” & *wón* “100” and Tk. **ōn* “10” & **ʒ̄ŭ̄ř* “100”. It is understandable, if “100” = “all tens” and “10” = “all fingers”, cf. Kor. *ōn* “all, whole, entire”; Turkic: Teleut *ončo* “all, plentifull” (Ramstedt 1949, 177), besides Baškir *on on* “100” = “10x10” (Gordlevskij 1945, 137).

61.2. Francis-Ratte (2016, 451) connects LMKor. *wón* “100” with the homonym *wón* “all” and both from LMKor. *wowol-* / *wo’ol-* “is all, is complete” with continuative suffix *-l-*. Related should be OJp. *-pwo* “100” (in compounds) and *opo* “great”.

8.4.4. Comments on the Koreanic numerals

The Korean numerals represent an original system, created predominantly independently from a few numerical terms probably inherited from Altaic ("1", "2", secondarily "3", further "10", "100"), Korean body part terms ("hand", "finger"), quantitative expressions ("double", "all" / "whole", "many" / "much") and basic arithmetic operations. In one case a substratal origin is possible ("4"). The system of the Korean numerals is in principle decimal, although there are certain traces of the quinary system: "5" = "whole hand", "6" = "plus finger" = "plus 1", "7" = "arising double" = "plus 2", "8" = "10 – 2", "9" = "taking off alone/single of all [ten]" = "minus 1", and maybe "20" = "hand x 4". From the point of view of semantic structure, the closest pattern appears in Tungusic: **tuańŋia* "5" = "all fingers", **ńiŋ-gün* "6" = "finger more", **ǯïab-kun* "8" = "two not", **xüńiä-gin* "9" vs. **xuńa-kān* "finger" (*TMS* I, 276–77), hence "a finger minus" (Blažek 1999, 125–26). Traditionally compared numerals "7", MKor. *nìlkwúp* and Tg. **nadan* (e.g. *EDAL* II, 959–60), should be separated, since their correspondence based only on the initial *n-* is not satisfactory. The Tungusic numeral "7" remains without any internal etymology, but there are similar forms of transparent internal structure in languages of its northern neighbor and probable former substratum (cf. Burykin 1984), Čukčo-Kamčatkan. In the Čukčan branch the numeral **ŋiðæq-məlləŋen* "7" consists of **ŋiðæq* "2" + **məlləŋen* "5" (Fortescue 2005, 197, 183), cf. e.g. Koryak of Karaga *nyettan-myllaŋa* "7" (Pallas; see Blažek 1999, 124). The same origin should be proposed for the Japanese-Koguryo isogloss "7". This means that Tungusic, Korean, and Japanese-Koguryo could have been influenced by a common substratum. The actually existing, though modest, common Altaic heritage in Korean numerals is comparable with the situation in Afroasiatic languages (cf. Blažek 1999, 28–79). In both cases the relatively marked diversity has been caused by a deep time of disintegration.

8.5. Japonic numerals

8.5.1. Survey of forms of the Japonic numerals

	1	2	3	4	5	6	7	8	9	10
Old Jp.	*pitö*	*puta*	*myi*	*yö*	*itu*	*mu*	*nana*	*ya*	*kökönö*	*töwo*
Cl.Jp.	*fito-*	*futa-*	*mi-*	*yo-*	*itu-*	*mu-*	*nana-*	*ya-*	*kokono-*	*towo*
Cl.Jp.Ch.	***iti-***	***ni-***	***san-***	***si-***	***go-***	***roku-***	***siti-***	***fati-***	***ku-***	***zifu***
Mo.Jp.	*hitotsu*	*futatsu*	*mittsu*	*yottsu*	*itsutsu*	*muttsu*	*nanatsu*	*yattsu*	*kokonotsu*	*too*
Hachijo	*tetsɯ*	*ɸtatsɯ*	*mittsɯ*	*jottsɯ*	*itsɯtsɯ*	*mɯttsɯ*	*nanatsɯ*	*jattsɯ*	*kokonotsɯ*	*to:*
Yuwan$_1$	*t$^{?}$ɨɨ*	*t$^{?}$a:tsɨ*	*mi:tsɨ*	*ju:tsɨ*	*ɨcɨtsɨ*	*mu:tsɨ*	*nana:tsɨ*	*jatsɨ*	*k$^{?}$u:nutsɨ*	*tu:*
Yuwan$_2$	*t'iitsï*	*t'aatsï*	*miitsï*	*yuuttsï*	*$^{?}$itsïtsï*	*muutsï*	*nanatsï*	*yaatsï*	*kuunutsï*	*tuu*
Shodon	*tiiti*	*taati*	*myiiti*	*yuuti*	*$^{?}$yitiiti*	*muuti*	*nanaati*	*yaati*	*khohoonoti*	*thu(u)*
Izena	*t'iitʃi*	*t'aatʃi*	*miitʃi*	*$^{?}$itʃi∞tʃi*	*muutʃi*	*nanatʃi*	*nanatʃi*	*yaatʃi*	*kukunutʃi*	*tuu*
OOkin.$_1$	*fitu-ri*[1]	*ta*	*mitu*	*yotu*	*itutu*	*mu*	*nana*	*ya*	*kokono*	*to(w)o*
OOkin.$_2$	*titsɨ*	*tatsɨ*	*mitsɨ*	*jutsɨ*	*itsɨtsɨ*	*mutsɨ*	*nanatsɨ*	*jatsɨ*	*kukunutsɨ*	*tu*
Nakijin	*t'i:tʃ'i*	*t'a:tʃ'i*	*mi:tʃ'i*	*ju:tʃ'i*	*ʔitʃ'tʃ'i*	*mu:tʃ'i*	*nanatʃ'i*	*ja:tʃ'i*	*kukunutʃ'i*	*tu:*
Shuri	*tiiçi*	*taaçi*	*miiçi*	*$^{?}$yuuçi*	*$^{?}$içiçi*	*muuçi*	*nanaçi*	*yaaçi*	*kukunuçi*	*tuu*
Miyako	*psïticï*	*fɥta:cʲ*	*mi:cʲ*	*ju:cʲ*	*icïcï*	*mujuka* 6 days	*nanacʲ*	*ja:cï*	*kukunucï*	**tu:*
Ikema	*çititɨtsɨ, ttitsɨ*	*ɸta:tsɨ, tta:tsɨ*	*mi:tsɨ*	*ju:tsɨ*	*itsɨtsɨ*	*n:tsɨ*	*nanatsɨ*	*ja:tsɨ*	*kkunutsɨ*	*tu:*
Agarin.	*psï∞tiitsï*	*fu∞taatsï*	*yuutsï*	*yuutsï*	*itsï∞tsï*	*mmtsï*	*nanatsï*	*yaatsï*	*kukunutsï*	*tuu*
Ogami	*pstii-ks*	*ftaa-ks*	*mii-ks*	*iuu-ks*	*iks-ks*	*mm-ks*	*nanɑ-ks*	*iaɑ-ks*	*kukunu-ks*	*tuu*
Irabu	*piticï*	*fïtaacï*	*miicï*	*juucï*	*icïcï*	*mmcï*	*nanacï*	*jaacï*	*kukunucï*	*tuu*
Hater.$_1$	*pitutsy*	*huta:tsy*	*my:tsy*	*ju:tsy*	*issy*	*ny:tsy / mu:tsy*	*nanatsy*	*ja:tsy*	*hakonatsy*	*tu:*
Hater.$_2$	*pï∞tsï∞tsï*	*fu∞taatsï*	*miitsï*	*yuutsï*	*issï*	*nntsï*	*nanatsï*	*yaatsï*	*hakonatsï*	*tuu*
Yonagu.	*t'u:ci*	*t'a:ci*	*mi:ci*	*du:ci*	*icici*	*mu:ci*	*nanaci*	*da:ci*	*kugunuci*	*tu*

Notes: 1) "one person".

	20	30	40	50	60	70	80	90	100	1000
Old Jp.	*pata*	*myiswo*	*yöswo*	**iswo*	**muswo*	**nanaswo*	*yaswo*	**kökönoswo*	*mwomwo*	*ti*
Cl.Jp.	*fatati*	*misoti*	*yosoti*	*iso-ti*[1087]	*musoti*	*nanaso-ti*[935]			*momo*	*ti*
Cl.Jp.Ch.	***ni-zifu***	***san-zifu***	***yon-zifu***	***go-zifu***	***roku-zifu***	***siti-zifu***	***fati zifu***	***kiu zifu***	***fyaku***	***sen***
Mo.Jp.	*hatachi*	*misoji*	*yosoji*	*isoji*	*musoji*	*nanasoji*	*yasoji*	*kokonosoji*	*momo*	*chi*
Yuwan$_1$	***ɲidzu:***	***sandzu:***	***jondzu:***	***godzu:***	***rokudzu:***	*nanadzu:*	***hatɕidzu:***	***kʲu:dzu:***	***çaku***	***ɕen***
OOkin.$_1$									*momo*	*ti*
Nakijin	***nidʒu:***	***sandʒu:***	***jondʒu:***	***godʒu:***	***rok'udʒu:***	*nanadʒu:*	***hatʃ'dʒu:***	***kju:dʒu:***	***pja:k'u***	***ʃin***
Miyako	*patacï*	*misɥcï*	*jusɥcï*	*icï(sɥ)cï*	*msɥcï*	*nanasɥcï*	*ja:sɥcï*	*kukunusɥcï*	*mumucï*	
Ikema	***ɲiʒu:***	***sandʒu:***	***jondʒu:***	***godʒu:***	***rokuʒu:***	*nanadʒu:*	*hatɕiʒu*	*kju:ʒu*	***çaku***	***seŋ***
Hater.$_1$	***ninzu***	***sanzu***	***synzu***	***gunzu***	***rukuzu***	***systyzu*** / *nanazu*	***pastyzu***	***kunzu***	***pja:gu***	***sen***

8.5.2. Sources of the Japonic numerals

Agarinakasone: Vovin (2005–09). **Classical Japanese,** plus **Chinese** set: Vovin (2003: 145–6). **Hachijo:** Z. **Hateruma$_1$ of Yaeyama:** Aso Reiko, 2008 https://mpi-lingweb.shh.mpg.de/numeral/Yaeyama.htm. **Hateruma$_2$:** Vovin (2005–09). **Ikema of Miyako:** Yuka Hayashi, 2013 <https://mpi-lingweb.shh.mpg.de/numeral/Miyako.htm>. **Irabu:** Z. **Izena:** Vovin (2005–09). **Miyako:** Nevskij (2015). **Modern Japanese:** Atsuhiko Kato, 2007 <https://mpi-lingweb.shh.mpg.de/numeral/Japanese.htm>. **Nakijin of Okinawa:** Shigehisa & Michinori 2008 <https://mpi-lingweb.shh.mpg.de/numeral/Kunigami.htm>. **Ogami:** Pellard (2009). **Old Japanese:** Vovin (2005–09). **Old Okinawan$_1$:** Vovin (2005–09). **Old Okinawan$_2$:** Z. **Shodon:** Martin (1970). **Yonaguni:** Z. **Yuwan$_1$ of Amami:** Yuto Niinaga, 2013 https://mpi-lingweb.shh.mpg.de/numeral/Amami.htm. **Yuwan$_2$:** Vovin (2005–09).

8.5.3. Comparative-etymological analysis of the Japonic numerals

62. OJp. *pyitö* “1”, *patu* “1st” (Vovin 2005–09, 346–349, esp. fn. 142).

62.1. Martin (1966, 238) and Miller (1971, 230) compared it with MKor. *pǐrís*(*ó*) “at first”, *pǐrís-* “to begin” ~ *pìlúsé* ‘at first,’ later *pìlúswó & pìlúswú* (Vovin 2005–09, 348). Starostin (1991, 99; 73) added Ramstedt’s (1907, 5) comparison of Tk. **bǐr* “1” and WrMo. *büri* “all, each”. Ohno (1970, 131) directly connected the Japanese and Turkic forms. Starostin, Dybo & Mudrak (*EDAL* 364) reconstruct Altaic **bi̯uri*, while Starostin (1991, 99) preferred **birV*. On the other hand, Vovin (2005–09, 348) accepts only the Japanese-Korean comparison, explaining the Korean liquid via the process of lenition *l* < **t*, described by Martin (1996, 2–3). Whitman (2012, 32) reconstructs pKorJp. **pitɨ* = **pitə* by Francis-Ratte (2016, 336, 442).

With regard to different vocalism, Vovin (2005–09, 349, fn. 142) prefers a borrowing of the Old Japanese *pyitö* “1”, or still more probably *patu* “1st”, from Paekche (Baekje).

62.2. Murayama (1975, 186) and Kawamoto (apud Starostin 1991, 99) connect Jp. “1” with Austronesian **it’a?* “1” (Dempwolff), postulating the prefix **p-*. Miyake (p.c.) admits that *p-* could spread from the numeral “2” to form the pair as “3”/”6” and “4”/”8”, but rejects this comparison for incompatibility of OJp. *-t-* and Austronesian *-t’-* (Dempwolff) = **-s-* (Blust).

62.3. Benedict (1990, 225) sought the origin of Jp. “1” in Austronesian **pi[ɣ]oŋ* “one-eyed” (Dempwolff).

63. OJp. *puta* “2” (Vovin 2005–09, 349–352).

63.1. Martin (1966, 249) compared it with MKor. *pčàk* “one of the pair” > Kor. *ččak* id., cf. *ipčak* “this side” (Ramstedt 1949, 19). Starostin (1991, 109) added Tk.

**bučuk* “half” (Räsänen 1969, 85; Sevortjan II, 283–284). For Vovin (2005–09, 351) the Turkic-Korean comparison is acceptable, while appurtenance of the Japanese “2” is less convincing for him in semantic perspective. Whitman (2012, 31) reconstructs pKorJp. **pəca-*, separating the velar extension in Korean. Whitman (2012, 33) also agrees with the old idea formulated e.g. by Ellis (1873, 50), identifying in the Japanese even numerals “2”, “6”, “8”, as the doubles of “1”, “3”, “4”.

63.2. An alternative comparison of Murayama (1975, 186) and Kawamoto with Austronesian **pat'aŋ* “pair” (Dempwolff) looks more promising than their Japanese-Austronesian comparison for “1” (quoted after Starostin 1991, 109). Concerning the different root vocalism, cf. Jp. *futsuka* “20th day [of the month] vs. *hatachi* “20 years old” (Miller 1971, 226).

63.3. Benedict (1990, 227, 257) differentiated the hypothetical Austronesian cognates of (i) OJp *futa-* “2”, and (ii) *fata-* “20”, which should be (i) pTsouic **-pusa-* “2 (years, nights, etc.)” and (ii) Austronesian **pats*$_{123}$*aŋ* “pair” (Dyen) = **pasaŋ* (Blust) respectively. Miyake (p.c.) again rejects this comparison for incompatibility of Japanese *-t-* vs. the Austronesian sibilant/affricate.

63.4. Miller (1971, 230) speculated about unattested pJp. **yuta-* “2”, which would have changed into **puta-* under the influence of **pitə-* “1”. This hypothetical form would be compatible with MKor. *turh* and Tg. **ǯöwär*.

64. OJp. *myi* “3” (Vovin 2005–09, 352–53).

64.1. The only evident cognate is Koguryŏ 密 **mi*(*l*) (Murayama) ~ **mir* (Lee) < **mit* (Miller) ~ **mrï* (Vovin) “3”. Vovin (2005–09, 353) reconstructs pre-proto-Japanese **miri-*. Miller (1971, 238–239) is apparently wrong, connecting this Japanese-Koguryŏ isogloss “3” with Tk. **ǖč* “3” (cf. Menges 1975, 93).

64.2. Vovin (1993b, 252, 254) proposed a rather risky comparison of Jp. “3” with MKor. *sey*(*h*) & *-ńe* “3” < **ńe[ ]i* and Tg. **[ń]ïlan* “3” (there is no evidence for **ń-* = **s-*).

64.3. Whitman (2012, 31, 33) seeks a cognate of Jp. “3” in MKor. *myéch* “a few; how many”, reconstructing pKorJp. **mjec*. Francis-Ratte (2016, 445) explains MKor. *myéch* from **mi-kaci*, where the second component is identified with MKor *kací* “kind, type”. The lenition of intervocalic **k* and final vowel loss had to lead to **mihac* > **my-ach* > MKor. *myech*.

Hypothetical external parallels:

64.4. Menges (1975, 92–93) compared Jp. “3” with Dravidian **mūn̲-* “3”, originally perhaps named after *”protruding [finger]” (Andronov 1978, 242).

65. OJp. *yö* “4” (Vovin 2005–09, 357–58).

65.1. If the initial *y-* is derivable from **d-*, the following comparanda are at our disposal: Tg. **duj-gin* // Mo. *dör-ben* // Tk. **dȫ̄rt* (first Boller 1857b, 473/83). But

various authors reconstruct different Altaic starting-points: Murayama (1962, 108; 1966, 154): **dō̄-*; Miller (1971, 221): **dör-*; Starostin (1991, 71; about the loss of *-r-* see p. 73): **tūr ~ *tōr*; Vovin (1994a, 106): **tV-*. On the contrary, Vovin (2005–09, 353) rejects the possibility of deriving OJp. *y-* from **d-* at all.

65.2. Rahder (1952, 265) connected Jp. *yö-* with Kor. *nəy-* "4", demonstrating the vacillation *n- ~ y-* by examples, like e.g. OJp. *nubu* "to sew" vs. *yubu* "to bind" // Kor. *nupi-* "to quilt, stitch".

Hypothetical external parallels:

65.3. Rahder (1952, 285) quoted the point of view of H. Izui concerning a common origin of Japanese, Korean and Fenno-Ugric numerals "4" (see Kor. "4"). Similarly Boller (1857, 473/83), Menges (1975, 92) and Kazár (1980, 210–211) compared OJp. *yö-* with Fenno-Ugric **ńeljä* "4", and eventually also with Samoyed **tettə̑* "4" (Janhunen 1977, 159). But the Samoyed form is apparently borrowed from some Turkic language of a Bulgar-Čuvaš type (Blažek 1998b, 7).

65.4. Benedict (1990, 196) derived OJp. *yö-* from a reduplicated form **yöyö-* and connected it with Austronesian **(x₂ə)x₂əpat* "4"!

66. OJp. *itu* "5" (Vovin 2005–09, 358–59)

66.1. The numeral has been compared with the numeral "5" in other Altaic branches with initial *t-*: Mo. **tawu-* // Tg. **tu(a)ńŋa-* // MKor. *tasăs* (see above). But the vowel preceding *t* appears only in Koguryŏ 于次 *utu* (Murayama) = *üc* (Lee) = **ütsi* / **utsi* (Beckwith) = *utsï* (Vovin) "5", and perhaps also Old Danube Bulgar *ехтемъ* "5th", implying **etə* "5" (Mudrak 2005, 101) and puzzling Čaghatai *ittik* "50" (see §14.2.). Vovin (1994a, 106+ 1994b, 253) tried to reconstruct **i-* in Tungusic too, postulating the following development **ituŋa* > **t̰iuńŋa* > STg. **cunǯa*, but later he rejects his solution (Vovin, 2005–09, 359), accepting the palatal regressive assimilation under the influence of *ǯ* (cf. §34.1.), proposed by Norman (1977, 230–33). On the other hand, Starostin (1991, 70, 138, fn. 138 *sic*) thought that *i-* appeared secondarily under influence of the root *i-* in *i-swo* "50" of unknown origin; cf. also *i-pwo* "500". But it is difficult to accept the solution of Rahder, proposing the Austronesian origin of this *i-* (cf. §58.4.) and without explanation of origin of OJp. *°tu*.

Hypothetical external parallels:

66.2. Boller (1857b, 473/83) compared Jp. *itu-* with Fenno-Ugric **wĭt(t)i* "5" (Sammallahti 1988, 489) = **witte* (*UEW* 577), related to Samoyed **wüt* "10" (Janhunen 1977, 177; Sammallahti 1988, 541 reconstructed pUralic **wit(t)i*) – see also Menges 1975, 95 (Jp+FU), Kazár 1980, 60 (Jp. + Ur.). This comparison could be acceptable also from the point of view of the Nostratic hypothesis, assuming a regular correspondence of Uralic **w-* vs. Altaic **∅-//*b-*, depending on the following vowel (Illič-Svityč 1971, 150).

66.3. There is also an interesting extra-Altaic example in Eskimo *itu-mak* “the palm of the hand” (Thalbitzer 1908, 23), which may be a cognate of the Uralic numeral or a witness of some Eskimo-like substratum in the predecessor of Koguryŏ-Japanese .

66.4. Rahder (1952, 238–39) saw in *i-* a relic of ***in* corresponding to Palau *im*, Atayal *ima-* “5” < Austronesian **lima^{c}* (cf. also Benedict 1990, 206).

67. OJp. *mu* “6” (Vovin 2005–09, 359–60)

67.1. It has traditionally been linked in a pair with OJp. *mi* “3” (Schott 1853, 11; Miller 1971, 237–238; Menges 1975, 92; Ivanov 1977, 36; Syromiatnikov 1981, 71).

67.2. Starostin (1991, 78, 141) compared *mu* with the Tungusic counterpart reconstructed and segmented by him as **ńu-ŋu-n* “6” (similarly Vovin 1994a, 106).

67.3. Boller (1857b, 473/83), followed by Menges (1975, 94), compared Jp. *mu-* “6” with Samoyed **mə̑ktut* “6” (Janhunen 1977, 85); similarly Kazár 1980, 108. But the Samoyed numeral is etymologizable on the basis of Samoyed **mə̑kå* “back” (Janhunen 1977, 85), like Fenno-Ugric **kŭ̆(t)i* “6” vs. **kuttV* “back” (*UEW* 225); hence “6” = “beyond [5]” is quite plausible in both Fenno-Ugric and Samoyed (Blažek 1998b, 8).

68. OJp. *nana* “7” (Vovin 2005–09, 361–62)

68.1. Shimmura (1927), quoted by Rahder (1941, 641), found a cognate in Koguryŏ 難隱 **nanuən* (Murayama 1975, 187) = **nanən* (Lee) = **nanïn* (Shimmura/Rahder; Vovin) = **nan-ær* : **nan-æn* (Beckwith 2007, 133 interprets the final syllable as the genitive-attributive suffix) “7”.

68.2. But already Boller (1857b, 473/83) compared Jp. *nana-* with Manchu *nadan* “7”. Boller and Shimmura were followed by Rahder (1952, 281); Murayama (1958, 229); Hamp (1970, 197); Syromiatnikov (1981, 71); Starostin (1991, 141); Vovin (1994a, 106), operating with Tg. **nadan* “7”. None of them offer any further etymology. Miller (1971, 241–242) saw borrowings in Japanese & Koguryŏ numerals “7”, together with the Tungusic counterparts, ultimately from some Mongolic source (see #36).

68.3. The hypothesis of the borrowing of Tg **nadan* “7” from some substratal source, probaly of a Čukčo-Koryak type, also implies a similar origin or a cultural diffusion for the Japanese-Koguryŏ isogloss. Anderson (1984, 42) mentioned a set of very strange Japanese numerals compiled in the *Comparative dictionary* of Pallas (1787), including *naka-c* “7”. Anderson’s interpretation “2+[5]” has no concrete support within Altaic, but would be explainable thanks to Čukčo-Koryak, cf. e.g. Koryak (Krašeninnikov) *nïákoletenγak*, Oleni Koryak *niyax-malagan*, Koryak of Kamenskoe *ŋáa-mádləŋen* “7”, in both of the last examples evidently “2+5” (Anderson 1984, 30).

68.4. On the other hand, in the case of this deviant form, it is possible to imagine a contamination of the properly Japanese numeral with Nivkh *ŋamg* “7”.

69. OJp. *ya* “8”, also “many” (Vovin 2005–09, 363–65)

69.1. It has been derived from *yö-* “4” by means of an “internal apophony” (Miller 1971, 231; Syromiatnikov 1981, 47, 71).

69.2. At the same time, Miller l.c. connected it with Tg. **ǯabkun* “8”, similarly Starostin (1991, 141); Vovin (1994a, 106), and first already Boller (1857, 473/83). But Tg. **ǯabkun* probably represents an innovation with the inner Tungusic etymology (see above). It is remarkable that in the same book Miller compared Tg. “8” with Jp. *tako* “octopus” (1971, 85) < Middle Japanese *tàkò* < Old Japanese *takwo*, but it is more probably related with the following Tungusic designations of aquatic animals: Orok *tāχa* “crab-octopus”, Solon *tāxir*, Manchu *taχura* “shell, shelled animals” etc. (*TMS* II, 154), and maybe WrMo. *taqu* “a kind of fish”, borrowed into Manchu *taqu*, Nanai *taqụ* “толстолбик” (*EDAL* II, 1395).

69.3. Kazár (1980, 208–209) saw a counterpart of OJp. *ya-* “8” in Ugric **ńalV* “8”, referring to the equation OJp *yö-* “4” vs. *ya-* “8” = FU **ńeljä* “4” vs. Ugric **ńalV* “8”. This point of view seems promising at least in typological level (the key question is whether or not OJp. *y-* does indeed correspond to FU/Ur. **ń-*).

70. OJp. *kökönö* “9” (Vovin 2005–09, 365–66)

70.1. Shiratori (1937; quoted after Miller 1971, 234) saw the origin of Jp. *kokono-* “9” in *koko* “bend” and *na* “not”, hence *”not obtained by bending”. It was rejected by Miller (1971, 234). Miyake (p.c.) adds that in this case it would be the only compound with a negative suffix *-na* in Japanese – a sign of a dubious ad hoc solution.

70.2. Ohno (1970, 131) tried to explain the numeral “9” with help of Jp. *kokodaku* (OJp **kököda-*) “very many”. Miller (1971, 236) rejected it.

70.3. Miller (1971, 237) himself saw in OJp. *kökönö* and Tg. **xüyägün* (Benzing) a multiplication “3 x 3”. In Tungusic it is improbable for phonetic reasons (see the discussion in §38.2). The Japanese numeral, esp. accepting the reconstruction **kənəkənə-*, really can be interpreted as the multiplication (see §21). This reconstruction may be supported by the strange form *nogono-c* “9” (Pallas 1787, #166), although its mistaken record cannot be excluded. A very important support appears in WrMo. *γuna(n)* “three-year-old (animal, boy etc.); third day of a month” (Lessing 1960, 368).

Note$_1$: The multiplication “3 x 3” forming the numeral “9” is not usual, but it does not mean that it cannot exist. E.g. in various dialects of the Yuma group of the Hokan language family just this structure is safely recognizable: Cocopa *xwak* “2”, *xəmuk* “3”, *xmxu.k* “6” = “3 x 2”, *xmxmuk* “9” = “3 x 3”, Yuma *xavik* “2”, *xamók* “3”, *xuːmxuːk* “6”, *xʷmxʷmók* “9”, etc. (Langdon & Munro 1980, 124–125).

70.4. Starostin (1991, 141) compared OJp. *kökönö* directly with Tg. “9”, in his reconstruction **xegün*, similarly Vovin (1994b, 106), reconstructing Tg. **xegɨn*. These

reconstructions cannot explain all historically attested forms in the Tungusic languages, as discussed above (§38.3.).

Note$_2$: A more plausible protoform should be Tg. **xüńiägin*. Above it was demonstrated that Tg **xüńiägin* "9" can be analyzed as a derivative of **xuńa-kān* "finger", hence "9" = *"[one] finger [lacking]" (§38.1.), or it can represent a borrowing from a Čukčo-Koryak substratum (§38.5.). On the other hand, the Japanese numeral is unanalyzable, which means that a borrowing from Tungusic represents not only a legitimate, but also a possible solution.

71. OJp. *töwo* "10" (Vovin 2005–09, 366–68)

71.1. Ohno (1970, 27, 131) tried to derive the numeral from OJp. *töwomu* "to be bent, be curved", Jp. *tawamu* "to bend, be bent", but Miller (1971, 232) rejected it.

71.2. Miller (1971, 235–36) preferred the relationship to Tg **ǯuwan* "10", starting from the initial pAlt. **d-*. Similarly Starostin (1991,141) and Vovin (1994a, 106), but they reconstructed pAlt. **čuwa* and **čuba-* respectively, however without any attempt to explain the semantic motivation leading to this etymology. Kor. *čoi* "all, altogether, entirely" (see Tg. "10") is perhaps compatible semantically, and with **čuwa-* also phonetically.

71.3. Ozawa (1968, 126, #47) compared OJp. *töwo* "10" and WrMo. *tabun* "5". Although Miller (1971, 233) rejected it for different semantics, they are compatible, if the etymology of Tg. **tuańŋia* "5" = *"all fingers" (§34.3.) is valid. The only difference would be "all fingers of one hand" = "5" vs. "all fingers of two hands" = "10".

71.4. Murayama (1962b, 6, 9) connected OJp. *töwo* "10" and Koguryŏ 德 **tę*(*k*) "10" = **tək* (Beckwith), although the correspondences are not clear. Toh Soo He (2012, 136) is probably right, deriving Koguryŏ **tök* from **töwök*[158], which is more compatible with the Japanese numeral. He also ascribes the numeral to the Old Korean language of the kingdom of Baekje. Lee (1963, 98) surprisingly related Koguryŏ 德 *tęk* "10" with OTk. **tokuz* "9" – cf. the negative reaction of Miller (1971, 236).

71.5. Beckwith (2007, 138–39) derived pJp. **tə*, **təwo* and Koguryŏ 德 **tək* "10" from pKorJp. **təkwo* and it should have been borrowed from OCh. dial. $^{+}$*dekeb*[159].

71.6. Ramstedt (1982, 212) compared Jp. *tō* "10" with Ainu *toe*, *toye* "many", and further with Kor. *tōi̯-*, *tō̄-* "to be thick".

158 It is tempting to see here a shortened compound **tŏwo-kVrV* *"all fingers", cf. PMo. **kuruγu* „finger, toe" > WrMo. *quruγu(n)*, MMo. *quru'un* (SH), *qoryan* (IM), *qurun* (MA), Khalkha *xurū*, Buryat *xurga(n)*, Kalmyk *xurγn̥*, etc. (Ramstedt 1935, 198); Tg. **xurū* „handful" > Evenki *urū*, Ulča *χuru*, Orok *χuru*, Nanai *χoro*, etc. (*TMS* II, 288); Middle Korean *soǹs-kàràk* „finger".

159 Beckwith's reconstruction is rather strange, with regard to the reconstructed development of this Chinese numeral and its Sino-Tibetan cognates: Chinese 十 *shí* „10" < Middle Chinese **źip* < Postclassic Chinese **gjip* < Han Chinese **gjəp* < Classic & Preclassic Old Chinese **gip* (*GSR* 0686 a-d; Starostin, *ChEDb*); Vietnamese reading: *thập*. Sino-Tibetan **k(h)ĭp* „10" > Burmese *kjip* „10" (in numbering of rational beings); Kuki-Chin **klp*; Limbu *gip-* id. (Shafer 1974, 46; Benedict 1972, 19). Baxter & Sagart (2014, 79, 154, 160) reconstruct MCh. **dzyip* < OCh. **t.[g]əp*.

72. OJp. *-swo* forms the tens 30–90 (Vovin 2015–09, 369–70).

72.1. Ohno (1955, 276–77, 296) and Murayama (1958, 229) connected *-swo* with Kor. *son*, MKor. *swon* "hand", but Miller (1971, 227) rejected this comparison

72.2. Miller (1971, 227) saw in *-swo* an allomorph of OJp. *töwo* "10", referring to the *t-*/*-s*-variation described in Japanese. But Vovin (2005–09, 370) rejects such a vacillation.

72.3. Benedict (1990, 224–25) compared it with Kadai **tsia* and Austronesian **ʔitsa* ~ **ʔatsa* "1", **tsa-* "(compound) one", widespread in Austronesian in "10", "100" and "1000". But it is nothing more than the numeral 1".

72.4. Vovin (2005–09, 370) connects OJp. *-swo* with the component forming the Middle Korean numerals 30–90: *syèlhún* "30", *màzòn* "40", *swuy:n* "50", *yèswyuy:n* "60", *nìlhún* "70", *yètún* "80", *àhón* "90". The variants *-hun/-zon/-un/-on/-Vn* have to reflect Old Korean **-son / *-sun* according to Vovin. He judges that from some source close to Baekje the Old Japanese suffix *-swo* was borrowed.

72.5. Francis-Rattte (2016, 450) identifies a cognate in a hypothetical pre-MKor. **so* "10", reconstructed on the basis of LMKor. *súmúlh* "20" as **so-mulu* "both tens", where the second component is connected with LMKor. *mul(G)uys* "in general" (p. 179), without any trace of the meaning "both".

73. OJp. *mwomwo* (Vovin 2005–09, 373–76).

73.1. Starostin (1991, 78) reconstructed pJp. **muàmuà* and compared it with NTg. **ńamā-* "100" and OTk. *jom-γï* "big number, quantity, all" (cf. Sevortjan IV: 219–220), reconstructing pAlt. **ń[ua]mV* "a big number; 100". In *EDAL* 1004–05 Mo. **ǯaγun* "100" was added and the Altaic reconstruction modified to **ńə̆mò*. See also §41.1.

73.2. The Japanese word suggests an original reduplication or a shortened hypothetical compound **mworo-mwo* "all *tens", cf. OJp. *mworo* "all, every" (*EDAL* 906). The second component should correspond to Even **mïan* "10", pl. **mïar*. The hypothetical form **mïan-mïar* "ten tens" could transform into NTg. **ńamā-*, perhaps via metathesis **mïan*^{o} > **ńam*^{o}, cf. Manchu *niaman* "heart" < Tg. **mïańan-* (*TMS* I, 533–534; *EDAL* 928). See §41.2.

73.3. OJp. *mwomwo* "100" may have been adopted from some North Formosan language, cf. Atayal *mampo* (var. *mappo*, *marppo*, *marapo*, *malpu*), Seediq *mappao* (var. *mapou*, *moulpo*) "10" (Ogawa 2006, 666) < **ma-puluq* (Blust) thanks to the trade with the Ryukyuan Archipelago, where the reduplication **mampo-mampo* "10 x 10" > **mpompo* "100" might be used.

Let us mention that the pairing of some numerals similar to the Japonic pairing of numerals is also known in several Formosan languages (cf. Ivanov 1977): Atayal *tuuʔ* "3" vs. *matuuʔ* "6", *səpat* "4" vs. *maspat* "8"; Seediq: *teru* "3" vs. *mteru* "6", *sepac* "4"

vs. *msepac* “8”; Thao *turu* “3” vs. *katuru* “4”, *ʃpat* “4” vs. *kaʃpat* “8”; Saisiyat *ʃəpat* “4” vs. *kaʃpat* “8”, etc. (Jen-kuei Li; https://mpi-lingweb.shh.mpg.de/numeral/Austronesian.htm).

74. OJp. *-pwo* “hundred” (in compounds) is really attested only in the numerals *ipwo* “500” (**itu-pwo*?) and *yapwo* “800” (Vovin 2005–09, 374, 376–77: unclear origin).

74.1. Benedict (1990, 214) connected *-pwo* (and *mwomwo*!) with Austronesian **Ribu* or **ɣibu* “1000”, referring to two other north Formosan languages, where the meaning is “100”: Kavalan *ɣasibu*, Ketagalan/Basay *ļatsibu* “100” < **(t)sa-ɣibu* < **ʔətsa-Ribu* “1 x 100”. Similarly Yami (Botel Tobago/Lanyu/Orchid Island, 46 km southeast from Taiwan) *asa pō* or *sapōgo* “100” vs. *asa* “1”, *po & pō* “10” (Ogawa 2006, 633, 669, 706).

74.2. The numeral “100” can be formed directly from the numeral “10”, similarly as Indo-European **km̥tom* “100” from the syntagm **dekm̥-dkm̥tom* “ten of tens”. In this perspective OJp. *-pwo* “100” could originate from the same North Formosan forms for “10” quoted in §73.3., which were reduced to the last syllable: Atayal *(mam)po*, *(mal)pu* (Ogawa), *(maɣal)puɣ*, *puɣ* (Jen-kuei Li), besides *(mə)puw* (Tali’ Hayung) <https://mpi-lingweb.shh.mpg.de/numeral/Atayal.htm>), Seediq *(map)pao*, *(moul)po* “10” (Ogawa); further Yami (see 74.1.) *po & pō* “10”; Bontok *po* “10 (used in counting)”, besides *sinpu’ru* “10” (Reid) etc., all from Proto-Austronesian **puluq* “10” (Blust). Related is the numeral “10” in two branches of the Tai-Kadai family: Proto-Hlai **fu:t* (Norquest); Proto-Kadai **pwlot*^{D} (Ostapirat).

74.3. In some Formosan and Philippinese languages the numeral “100” was replaced by the following innovation: Seediq (Taiwan) *ke-bekuy*; Ilongot (Luzon) *tanbokɣay* “100” vs. *tampo* “10”, which could alternatively be a source of OJp. *-pwo*.

8.6. Cardinal numerals in the Altaic daughter protolanguages and their probable cognates

8.6.1. Cardinal numerals “1” – “10” and “100”

	Proto-Turkic	Proto-Mongolic	Proto-Tungusic	proto-Korean	Koguryŏ	Common Japonic
	Mudrak 1993	Blažek 1999, 110	Blažek 1999, 120	cf. Blažek 2013	Beckwith 2007 Vovin 2010	Vovin 2005–2009
1_1	**bǐr*	**büri* each, all				
1_2		**ni-gen* cf. **nei* one and all; all together	cf. **neje-* similar			cf. OJp. *ni-* to resemble
1_3		cf. **emüne* from the front	**ämün*			cf. OJp. *ömö* front side
1_4				**xatun*		**kata* one of a pair
1_5				cf. **pitu-se* at first		**pitö* 1 & **patu* 1st
2_1	**ękki* < **eg-ki* following					
2_2		**qoyi-r* cf. *qoyina* in the rear, back; after		cf. Kor. *kai* 2 in ‘Four-stick-game’		cf. OJp. *kye* other, different
2_3	OBulg. **tvirem* Č. *tebər* 2nd	**ǯi[w]r-in*	**ǯöwär*	**tuwir*		OJp. *ture* companion
2_4	cf. **bučuk* half			cf. MKor. *pčàk* one of a pair		**puta* **pata* 20
3_1	**ü’č*					
3_2		**γur-ban*		NKor. *kŏl* 3 in ‘Four-stick-game’		cf. **kökönö* 9 < **könö-könö* ? 3 x 3
3_3			**jïl(e)lan* < Yu.			
3_4	**sek(k)iř* 8 = ?*second triad	cf. **serege* trident	cf. Man. *sertei* threefold, triple	**serik*		
3_5				cf. MKor. *myéch* a few; how many	密 **mir* Be **mrï* Vo	**mi-*
4_1	**dȫrt*	**dör-ben*	**duj-gin*			**yö-*
4_2		cf. **nayiR* or **nagiR* *4 in **nay-iman* 8	?**ńiŋ-gün* < **ńil-gün* minus 4	**nerki*		
5_1	**bȩ̄lk* cf. **bilek* wrist, forearm		cf. **bile-n* wrist			
5_2		**tawu-[γa]n* *all	**tuańŋia* *all fingers	**taNsw^{o}* < **ta-son* *whole hand	cf. **tək* Be **tök*Toh 10 < **tȫwök* < **töwö-kVrV* all fingers	cf. **tȫwo* 10
5_3	OBulg. **e’tem* 5th < Tk. **eti* *5? cf. **el(l)ig* 50 < **et-lig*				于次 **ütsi / *utsi* Be **utsï* Vo	**itu-*

	Proto-Turkic	Proto-Mongolic	Proto-Tungusic	proto-Korean	Koguryŏ	Common Japonic
	Mudrak 1993	Blažek 1999, 110	Blažek 1999, 120	cf. Blažek 2013	Beckwith 2007 Vovin 2010	Vovin 2005–2009
6_1	**alti* < **al eti* in front of *five					
6_2		**ǯirγu-γan* < **ǯir-γur-γan* 2 x 3				
6_3			**ńiŋ-gün* *finger more or < ČK			
6_4				**yŏl-suL-us* *open finger		
6_5						**mu* vs. **mi* 3
7_1	**ǯet(t)i* < **ǯet-tü-eti* a pair more-over five					
7_2		**d[a]l(u)-γan* *full?				
7_3			**nadan* < ČK		難隠 **naniːn*[Vo] **nan-ir /-in*[Bc] < ČK	**nana* < ČK
7_4				**nil-kup* *raised double {of fingers}		
8_1	**sek(k)iř* 8 = ?*second triad or **es-ekki-ř* without two					
8_2		**nayiman* < **nayid-man*, where **nayid* would be pl. from **nayiR* or **nagiR* *4				
8_3			**ǯïab-kun* minus 2			
8_4				**yer-tuwir* 10–2		
8_5						**ya* vs. **yö-* 4
9_1	**tok(k)u-ř* *second four-finger span					
9_2		**yer-sün* < **yer-sön* *ten minus single				
9_3			**xüńiä-gin* *minus finger or < ČK			
9_4				**axob* < **aw- hwon/l op[un]* taking off single of all [ten]		
9_5		cf. WrMo. *γunan* three-year-old				**kökönö* < **könö-könö* ? 3 x 3

	Proto-Turkic	Proto-Mongolic	Proto-Tungusic	proto-Korean	Koguryŏ	Common Japonic
	Mudrak 1993	Blažek 1999, 110	Blažek 1999, 120	cf. Blažek 2013	Beckwith 2007 Vovin 2010	Vovin 2005–2009
10_1	**ōn*	cf. **ono-* to count	cf. **oṅō* picture, **oṅa-* to draw	cf. **on* 100, besides Kor. *ōn* all, whole		
10_2		**[φ]ar-ban* *designated quantity				
10_3		cf. *ǯaγ/wun* 100	**ǯuwan*, pl. *-ar* < **uǯu-an* *end of right [hand]?			
10_4			**mïan*, pl. *-ar*	cf. Kor. *măn* hand, *mandi-* fingern		cf. OJp. *mwomwo* 100
10_5	cf. **ǵŭř* 100	cf. **yer-sün* < **yer-sön* *ten minus single		**yer[u]h* < **yer-turh* group of ten		
10_6					德 **tək* Be **tök*Toh < **töwök* < **töwö-kVrV* all fingers	**töwo*
100_1	**ǵŭř*			cf. **yer[u]h* 10		
100_2		**ǯaγ/wun*	cf. **ǯuwan*, pl. *-ar* 10			
100_3			**ṅamā-* < **mïanmïan* 10 x 10?			**mwomwo* < **mworo-mwo* all *tens
100_4			**taŋū* = *number cf. *taŋ-* to count			
100_5	cf. **ōn* 10	cf. **ono-* to count		**on*		

Abbreviations: Be Beckwith, ČK Čukčo-Kamčatkan, Vo Vovin, Yu. Yukaghir.

8.6.2. Decads in five Altaic branches

	Proto-Turkic	Proto-Mongolic	Proto-Tungusic	proto-Korean	Old Japanese
	Mudrak 1993	Blažek 1999:110	Blažek 1999:120	cf. Blažek 2013	Vovin 2005–2009
20	**ǯegirbi*	**qor-in*	**ǯöwär-ǯuwan/r* **ǯöwär-mïar* S. **xorïn*	**tu-son-mur*	*pata*
30	**hottuř* ~ **holtuř*	**γurt-in*	**jïllan -ǯuwan/r* **jïllan-mïar* S. **gurtïn*	**serki-yereh-son*	*myi-swo-* cf. Jp. *miso-ka* last day of month
40	**k'ir'k*	**dört-in*	**duǰgin-ǯuwan/r* S. **dörtïn*	**man/r-son*	*yö-swo*
50	**el(l)ig* < **et-lig*	**taw-in*	**tuaṅŋia-ǯuwan/r* **tuaṅŋian-mïar*	**swoN-son*	**i-swo* MJp. *iso-*1087 CE
60	**alt-bił*	**ǯar-an*	**ńiŋgün-ǯuwan/r* **ńiŋgün-mïar*	*yŏr-sur-son*	**mu-swo*
70	**ǵet-bił*	**dal-an*	**nadan-ǯuwan/r*	**nir-kup-son*	**nana-swo* MJp. *nanaso-*935 CE

	Proto-Turkic	Proto-Mongolic	Proto-Tungusic	proto-Korean	Old Japanese
	Mudrak 1993	Blažek 1999:110	Blažek 1999:120	cf. Blažek 2013	Vovin 2005–2009
80	**sek(k)iř-ōn*	**nay-an*	**ǰabkun-ǰuwan/r* **ǰabkun-mïar*	**yer-tu-son*	*yaswo*
90	**tokkuř-ōn*	**yïr-en*	**xüńägin-ǰuwan/r* **xüńiägin-mïar*	**axob-son*	**kökönö-swo*

Note: The Old Japanese numerals (with exception of "10" and "100" in the present tables) are extended by the suffixes *-tu*, *-tari*, *-uka*, determining 'objects', 'people' and 'days' respectively.

8.7. Systems of cardinal numerals in 'Palaeo-Siberian' languages

	Nivkh (Amur)	Čukči	*Čukčan **Čukčo-Kamčatkan	Southern Yukaghir	Northern Yukaghir	Hokkaido (Shiyunai) Ainu
	Gruzdeva	Kodzasov	Fortescue	Nikolaeva	Odé	Refsing < *Vovin
1	*ŋaqr*	*ənnên*	**ənnæn*	*irkēj*	*maarquon'*	*sine* < **si-ne*
2	*meqr*	*ŋirêq / ŋicêq*	***ŋiðæq*	*ataqlōj*	*kijuon'*	*tu* < **tuu-*
3	*caqr*	*ŋəroq*	***ŋəroq*	*jālōj*	*jaluon'*	*re* < **dE-*
4	*nikr*	*ŋəraq*	***ŋəraq*	*ileklōj* (beyond 3)	*jalaklan'* (beyond 3)	*ine* < **ii-ne-*
5	*tʰoqr*	*mətləŋên*	**məlləŋen-* < **mənyət-ləŋən* : **mənyə-* ‚hand'	*n'əyanbōj*	*imdald'an'*	*asikne* < **aski / *asik* : **askE* ‚hand'
6	*ŋax*	*ənnanmətləŋên*	= 1 + 5	*mālōj* = 2 x 3	*maalajlan'* = 2 x 3	*iwan* < **ii-Xan-* = 4 from 10
7	*ŋamk*	*ŋêrʔamətləŋên*	= 2 + 5	*purkījōj* = over 2	*puskijan'* = over 2	*arwan* < **a-d[E]-Xan-* = 3 from 10
8	*minr* (2 x 4)	*ŋərʔomətləŋên*	= 3 + 5	*malγiləklōj* = 2 x 4	*maalajlaklan'* = 2 x 4	*tupesan* < **tu-pE-Xan-* = 2 from 10
9	*ŋiŋben* (1 from 10)	*ŋərʔamətləŋên*	= 4 + 5	*kunirkil'ǯōj* = 10 – 1	*val'γańumkuruon'* < *wal'γande* 'one from' *& ńumruo* ‚all'	*sinepesan* < **si-nE-pE-Xan-* = 1 from 10
10	*mxo / mxoqr*	*mənyəkên*	**mənyət-ken-* : **mənyə-* hand + dual **-t*	*kunel'ōj*	*kunil'an'*	*wan* < **Xan-*
20	*meγ/ meʁoqr*	*qlikkin*	**qəlik-k-inæ* associated with a man (= ***qəlik*)	*ataqun kunel'*	*kin kunil'*	*hot* < **gOt* but cf. *ᴷhowat* < **howan-tu*?
30	*cʰxoǧr / cʰxoqr*	*qlikkin mənyəkên parol*	= 20 + 10	*jān kunel'*	*jaan kunil'*	*wan e tu hotne* = 10–(2x20)
40	*nxu / nxuqr*	*ŋirêqqlikkin*	= 2 x 20	*ilekun kunel'*	*jalaklan' kunil'*	*tu hotne* = 2 x 20
50	*tʰoγ / tʰoʁoqr*	*ŋirêqqlikkin mənyəkên parol*	= (2x20) + 10	*n'əyanbōžə kunel'*	*imdald'an' kunil'*	*wan e re hotne* = 10 – (3x20)
60	*ŋaγ-mxo / ŋaγ-mxoqr*	*ŋəroqqlekkên*	= 3 x 20	*mālun kunel'*	*maalajlan' kunel'*	*re hotne* = 3 x 20
70	*ŋamg-mxo / ŋamg-mxoqr*	*ŋəroqqlekkên mənyəkên parol*	= (3x20) + 10	*purkin kunel'*	*puskijan' kunil'*	*wan e ine hotne* = 10 – (4x20)

	Nivkh (Amur)	Čukči	*Čukčan **Čukčo-Kamčatkan	Southern Yukaghir	Northern Yukaghir	Hokkaido (Shiyunai) Ainu
	Gruzdeva	Kodzasov	Fortescue	Nikolaeva	Odé	Refsing < *Vovin
80	*minr-mxo / minr-mxokr*	*ŋəraqqlekkên*	= 4 x 20	*malyiləkun kunel'*	*maalajlaklan' kunil'*	*ine hotne* = 4 x 20
90	*ɲinben-mxo / ɲinben-mxokr*	*ŋəraqqlekkên mənyəkên parol*	= (4x20) + 10	*kunirkil'boǯə kunel'*	*val'yarumkuruon' kunil'*	*wan e asikne hotne* = 10 – 5x20)
100	*ɲ-ɣaŋq*	*mətləŋ qlekkên*	= 5 x 20	*kunel' kunel'*	*istuo* < Russian	*asikne hotne* = 5 x 20

Abbreviations: [K] Kuril data of Torii Ryûzô cited after Vovin 1993a.
Note: Insted of **X* Vovin (1993a, 32–34) reconstructs **hd-*.

Sources:
Ainu – Refsing 1986; proto-Ainu – Vovin 1993a.
Čukčan / Čukčo-Kamčatkan – Fortescue 2005.
Čukči – Kodzasov, Sandro V. 1997. *Chukchi Numerals*. <http://lingweb.eva.mpg.de/numeral/Chukchi.htm>
Nivkh – Gruzdeva, Ekaterina. 2007. *Nivkh Numerals*. <http://lingweb.eva.mpg.de/numeral/Nivkh.htm>
Yukaghir North – Odé, Cecilia. 2009. *Northern Yukaghir Numerals*.
<http://lingweb.eva.mpg.de/numeral/Yukaghir-Northern.htm>
Yukaghir South – Nikolaeva, Irina. 1991. *Southern Yukaghir Numerals*.
<http://lingweb.eva.mpg.de/numeral/Yukaghir-South.htm>

8.8. Conclusion on the Altaic numerals

The present etymological analysis of systems of numerals in all described Altaic languages allows to divide the studied forms into several sets:

A. Innovative forms originating independently in the individual branches are most plentiful. Some of them represent more or less the same semantic / algebraic pattern: 5_2, 6_3+6_4, $8_1+8_3+8_4$, $9_2+9_3+9_4$.

B. Forms which are common in several branches; they are etymologizable within Altaic: 4_1, 5_2, 10_1.

C. Forms analyzed as related in several branches, without internal etymology, but with hypothetical external parallels: 1_4, 2_3, 3_2, 4_2, 5_3.

D. Forms without convincing etymology, but with promising parallels in neighboring languages, where their internal structure is understandable. In this case it is legitimate to think about influences of substrata or adstrata: 3_3, $?6_3$, 7_3, $?9_3$.

The oldest layer is represented by the set C.

It is instructive to compare the internal diversity in the Altaic and Cushitic languages:

8.8.1. Survey of Cushitic numerals

	Beja	Agaw	East Cushitic	Dahalo	Iraqwoid	K'wadza	Asa	Ma'a
1a	**(un-)gaaL*							
1b		**la-y*^{w} m. **la-ti* f.						
1c			**mat-/*mit-*					
1d	*kwo* unit	**kaw-* be first	**kaww-*					
1e			**hal-*					
1f			**tak-kaw/-ta(y)*					
1g			**ʔiniki*					
1h			Yaaku *wɛhɛto*	*vattúk*^{w}*e* m. *vattékʷe* f.	**wakV*			*we*
2a	**mhaloo-/* **malho*	**läŋa /* **laŋa*	**lamma(y)* Muussiye *taammu* < **tl-*?	*líima*			*hlam*	
2b			Arb^{CR} *sada* Yaaku *çɛ*		**tsada*			
3a	**mhay*							
3b		**säy*^{w}*a /* **səy*^{w}*a*	**šizħ-/*šazħ-/* **šaz(zi)ħ-*					
3c			?Yaaku *xaat*					*xai*
3d				*k'aba*				
3e					**tami*	*tami*		
4a	**faḍig*		**ʔaf(w)ar-/ *ʔafur-*					
4b		**säʒ(ʒ)a*	**šalaħ-*	*saʕála*				
4c					**tsigaħa*			
5a	**ʔay*							
5b		**ʔank*^{w}*a*	**kani/*koni*		**kooʔani*	*koʔana*		*kooi*
5c			**xubin-*					
5d			**'omut-*				*mut*	
5e				*dáwàtte*				
6a	**ʔasa-gwiL*							
6b		**wäl-ta* 1 +						
6c			**(He)liħ-* < **ʔ/hali-ħVn-* or **-xubin-* 1 + 5		**laħooʔu*			
6d			**tabbi[n]* < **tak-xubin-* 1+5			*típa*		
7a	**ʔasa-Lamaa-*	**läŋä-/* **laŋä-tta* 2 +	**mal(V)-/*tlam-ħVn-* 2 + 5					
7b			**tizbuda-* < ?Mao **tiyaz-* 3 + **(m)beṭṣ-* 4					
7c					**faanqu*	*tipafáṅku*		
8a	**ʔasa-mhay*							
8b		**säy*^{w}*ä-tta* 3 +	**šiz[ħ]ent-* < **šizħ-* 3 + **ʔomut-* 5					
8c			**baħaar-*					
8d			**lamku-sizzV-* 2nd three			*lakádu*		
8e					**dakati*			
9a	**ʔas-faḍig*							
9b		**säʒ-ta* 4 +						
9c	cf. **-gaaL* 1		**saagal(an)-* minus 1 ?					

	Beja	Agaw	East Cushitic	Dahalo	Iraqwoid	K'wadza	Asa	Ma'a
9c/d	cf. *-*gaaL* 1		**gollan*		**gwaleeli*	*gweli*		
10a	**tamin*	**-täŋən*	**tomman-*					
10b		**cəka*						
10c			**kuḍḍan-/*kurn-*					*ixadu*
10d			Yaaku *qapon*					
10e					**mibaangw*	*mibi*		
100a	**šee*							
100b		**liɣ ~ *laɣ*						
100c			**boqol*					
100d			**kuḍ-*					
100e			**ḍibba*					
?100f			Ḍirayta *tseeta*		**tsiiru*			
1000a		**šax-i*						
1000b			**kuma*		**kuma*			

9. Abbreviations and Used symbols

AA Afroasiatic, abl. ablative, acc. accusative, adver. adverbial, all. allative, Alt. Altaic, alt. alternatively with, AP Asia Polyglotta of Klaproth, atr. attributive, Balk. Balkar, Bon. Bonan, Bulg. Old Bulgarian, Bur. Buryat, Ch. Chinese set, Cl(as). Classic, Co Common, com. comitative, con. connective, Crim Crimea, ČK Čukčo-Kamčatkan, dat. dative, Dg. Dagur, dir. directive, distrib. distributive, Don. Dongxiang, Dr. Dravidian, E Early, el. elative, eq. equative (= *casus comparativus*), erg. ergative, ex. exclusive, FU Fenno-Ugric, gen. genitive, IE Indo-European, in(cl). inclusive, instr. instrumental, Jp. Japanese, Karač. Karačai, Karakh. Karakhanid, Khamn. Khamnigan, Khl. Khalkha, Klm. Kalmyk, Kor. Korean, L Late, loc. locative, m modern, M Middle, Ma(n). Manchu, Manghr. Mangghuer, Mgr. Monguor, Mo. Mongol(ic), Mog. Moghol, Monghl. Monghul, N North, Narin. Naringhol, nom. nominative, O Old, obj. objective, obl. oblique, ord. ordinal, Ord. Ordos, Orkh.(-Yen.) Orkhon(-Yeniseian) Old Turkic, p proto-, part. partitive, poss. possessive, prol. prolative, prosec. prosecutive, ps. person, Ry. Ryukyu, S South, sim. similative, ŠY Šira Yughur, ter. terminative, term. terminal, Tg. Tungusic, Tk. Turkic, Ur. Uralic, W(r) Written, Yu. Yukaghir.

Used symbols:

Vowels: *A* = *a* ~ *ä* or *a* ~ *e*; *I* = *i* ~ *ï*; *O* = *o* ~ *ö*; *U* = *u* ~ *ü*; *V* vowel; *V̆* short vowel, *V̄* long vowel.

Consonants: *C* consonant.

10. Bibliography

Afanasjev, M.G. 1893. *Russko-kumykskij slovaŕ*. In: *Sbornik materialov dlja opisanija mestnostej i plemen Kavkaza*, vyp. XVII. Tiflis.

AJ = Altajskije jazyki. Jazyky Azii i Afriky, ed. by V. Kononov, A. N. et al. Moskva: Nauka 1993.

Aalto, Pentti. 1955. On the Altaic initial **p-*. *Central Asiatic Journal* 1, 9–16.

Aalto, Pentti. 1958. Materialien zu den alttürkischen Inschriften der Mongolei, gesammelt von G.J. Ramstedt, J.G. Granö und Pentti Aalto. *Suomalais-ugrilainen seura* 60.7, 1–91.

Aalto, Pentti. 1963. L'esquisse de la grammaire mongole qu'on trouve chez Melchisédech Thévenot. *Central Asiatic Journal* 8, 151–162.

Aalto, Pentti. 1975. G.J. Ramstedt and Altaic Linguistics. *Central Asiatic Journal* 19, 161–193.

Aalto, Pentti. 1976 + 1977. G. J. Ramstedts ongkor-solonisches Wörterbuch. *Rocznik Orientalistyczny* 38, 31–41 & 39, 55–84.

Aalto, Pentti. 1987. *Studies in Altaic and comparative philology*. Helsinki: The Finnish Oriental Society.

Abaev, Vasilij I. 1958–1973–1978–1989–1995. *Istoriko-ėtimologičeskij slovaŕ osetinskogo jazyka*, I. Moskva-Leningrad: Izdateľstvo Akademii nauk; II-III-IV. Leningrad: Nauka; V. Moskva: Institut jazykoznanija RAN.

Abel-Rémusat, M. 1820. *Recherchers sur les langues tartares*, *ou Mémoires sur différens points de la grammaire et de la littérature des Mandchos, des Mongols, des Ouigours et des Tibétains.* Paris: Imprimérie Royale.

Abramova, G. S. 2002. *Illjustrirovannyj slovaŕ oročskogo jazyka*. Sankt Peterburg: Drofa.

Abusentovoj, M. X. 2004. Predislovie. In: Jasawi, Xodža Axmet. *Xikmety*. Almaty: Dajk-press. 3–6.

Adamović, Milan. 1975. Ein italienisch-türkisches Sprachbuch aus den Jahren 1525–1530. *Wiener Zeitschrift für die Kunde des Morgenlandes* 67, 217–247.

Adamović, Milan. 1976. «Vocabulario nuovo» mit seinem türkischen Teil. *Rocznik Orientalistyczny* 38, 43–69.

Adelung, Johann Christoph. 1806. *Mithridates oder allgemeine Sprachenkunde mit dem Vater Unser als Sprachprobe in bey nahe fünfhundert Sprachen und Mundarten*, I. Theil. Berlin: Voss.

Ajdarov, G. 1971 *Jazyk orxonskix pamjatnikov drevnetjurkskoj piśmennosti* VIII *veka*. Alma-Ata: Akademija Nauk Kazaxskoj SSSR.

Alpatov, Vladimir M. 1997. Altajskie jazyki i obščaja lingvistika. In: *Altaica* I (Moskva: Institut vostokovedenija RAN), 10–22.

Alpatov, Vladimir M. 2001. Denis Sinor. Jubilej učenogo. In: *Altaica* V (Moskva: Institut vostokovedenija RAN), 9–13.

Alpatov, Vladimir M. 2007a. Sovremennoe sostojanie altajskoj gipotezy. In: *BILIM*. Gorno-Altajsk: Institut altaistiki, 51–54.

Alpatov, Vladimir M. 2007b. Altajskaja gipoteza ili altajskaja teorija? In: *Basileus. Sbornik statej, posvjaščennyj 60–letiju D.D. Vasiljeva*. Moskva: Vostočnaja literatura, 63–75.

Alpatov, Vladimir M. 2011. Ešče raz ob altajskoj probleme. In: *Tjurkologičeskij sbornik* 2009–2010. Moskva, 25–32.

Alpatov, Vladimir M. 2012. V.M. Solncev i altajskoe jazykoznanie. In: *Rossijskoe mongolovedenie. Bjulleteń* VI. Moskva: Institut Vostokovedenija RAN, 198–202.

Alpatov, Vladimir M. 2013. The Significance of S.A. Starostin's Works for the Altaic Studies. In: *Unknown Treasures of the Altaic World in Libraries, Archives and Museums – 53rd Annual Meeting of the PIAC* (St. Petersburg, July 25–30, 2010). Berlin: Klaus Schwarz Verlag, 293–302.

Altajskie jazyki, ed. by A.N. Kononov, G.D. Sanžeev, I.F. Varduľ. Moskva: Nauka – Vostočnaja literatura (Jazyki Azii i Afriki V) 1993.

Altangerel, D. 2001. *Altangerel's New Pocket English-Mongolian Dictionary*. Ulaanbaatar: Interpress.

Amanžolov, A. S. 2003. *Istorija i teorija drevnětjurkskogo pišma*. Almaty: Mektel.

Amyot, Jean Joseph Marie. 1789. *Dictionnaire Tartare-Mantchou Française*, *composé d'après un Dictionnaire mantchou-chinois*, redigé par L. Langlès, 1–3**.** Paris: Didot. <http://www.univie.ac.at/Geschichte/China-Bibliographie/blog/2010/06/27/langles-amiot/>

An, Jun. 1986. *Hezheyu jianzhi*. Beijing: Minzu chubanshe.

Anderson, Lloyd B. 1984. Number words in Northeastern Asia. *Folia Slavica* 7/1–2, 25–65.

Andronov, Mixail S. 1978. *Sravnitel'naja grammatika dravidijskix jazykov*. Moskva: Nauka.

Anikin, Anton E. & Xelimskij, Evgenij A. 2007. *Samodijsko-tunguskie leksičeskie paralleli*. Moskva: Jazyki slavjanskoj kuľtury.

AOH = Acta Orientalia Academiae Scientiarum Hungaric

Argenti, Philippo. 1533. *Regola del parlare turcho*. Constantinople: Ms.

Aston, William G. 1872. *A Grammar of the Japanese Written Language, with a short chrestomathy*. London: Phoenix.

Aston, William G. 1877. *A Grammar of the Japanese Written Language*. London: Luzac – Yokohama: Lane & Crawford. Second, expanded edition.

Aston, William G. 1879. A Comparative Study of the Japanese and Korean Languages. *The Journal of the Royal Asiatic Society of Great Britain and Ireland*, New Series,Vol. 11, No. 3, 317–364. https://doi.org/10.1017/S0035869X00017305

Ašmarin, Nikolaj I. 1898. *Materialy dlja issledovanija čuvašskogo jazyka*. Kazań.

Ašmarin, Nikolaj I. 1902. *Bolgary i čuvaši*. Kazań.

Ašmarin, Nikolaj I. 1928–1950. *Thesaurus linguae tschuvaschorum / Slovaŕ čuvašskogo jazyka*, I-XVII. Kazań-Čeboksary.

Atalay, Besim (ed. & trans.). 1945. *Ettuhfet-üz-zekiyye fil-lûgat-it-Türkiye* [Precious jewel of the Turkic language, or Exquisite gift to the Turkish language]. Istanbul: Türk Dil Kurumu.

Avrorin, Valentin A. 1959/1961. *Grammatika nanajskogo jazyka*, tom 1./2. Moskva – Leningrad: Izdateľstvo Akademii nauk SSSR.

Avrorin, Valentin A. 1960. O klassifikacii tunguso-mańčžurskix jazykov. In: *Trudy dvadcať pjatogo meždunarodnogo kongressa vostokovedov* (Moskva, 9–16 avgusta 1960), otv. red. B.G. Gafurov. Moskva: Izdateľstvo vostočnoj literatury, 400–404.

Avrorin, Valentin A. 1968. Nanajskij jazyk. In: *JN* V, 129–148.

Avrorin, Valentin A. 2000. *Grammatika maňčžurskogo piśmennogo jazyka*. Sankt-Peterburg: Nauka.

Avrorin, Valentin A. & Boldyrev, B. V. 2001. *Grammatika oročskogo jazyka*. Novosibirsk: RAN – Sibirskoe otdelenie.

Avrorin, Valentin A. & Lebedeva, E.P. 1968. Oročskij jazyk. In: *JN* V, 191–209.

Avrorin, Valentin A. & Lebedeva, Elena P. 1978. *Oročskie teksty i slovaŕ.* Leningrad: Akademija Nauk SSSR.

Axmetjanov, Rifkat. 2001. *Tatar telenen kyskača tarihi-etimologik süzlege*. Kazan: Tatarstan kitap neşriyyatı.

B = Böhtlingk 1851.

Baasanbat, D. 2008. *Mongol-mandž bičgijn xelnij dundyn üg*. Ulaanbaatar: MUIS & Mon-Education Press Publishing.

Bailey, Don Clifford. 1960. Early Japanese Lexicography. *Monumenta Nipponica* 16, 1–52. https://doi.org/10.2307/2383355

Bailey, Harold W. 1979. *Dictionary of Khotan Saka*. Cambridge: University Press.

Baitchura, Uzbek. 1994. On the Relation of the Volga Bulgar Language to Qazan Tatar and to Some Other Languages. *Rocznik orientalisticzny* 49, 39 –62.

Balanovsky, O., Zhabagin, M., Agdzhoyan, A., Chukhryaeva, M., Zaporozhchenko, V. et al. 2015. Deep Phylogenetic Analysis of Haplogroup G1 Provides Estimates of SNP and STR Mutation Rates on the Human Y-Chromosome and Reveals Migrations of Iranic Speakers. *PLoS ONE* 10(4): e0122968. doi: 10.1371/journal.pone.0122968

Bálint, Gábor. 1876. *Kazáni-tatár nyelvtanulmányok. Kazáni-tatár szotár* [Studies in Kazan Tatar linguistics. A Kazan Tatar dictionary]. Budapest: Akadémia.

Bálint, Gábor. 1877. *Kazáni-tatár nyelvtanulmányok. Kazáni-tatár nyelvtan* [Studies in Kazan Tatar linguistics. A Kazan Tatar grammar]. Budapest: Akadémia.Banzarov, Dordži. 1891. O proisxoždenii imeni Mongol. In: *Šamanstvo u mongolovъ i drugija staťi*, red. G.N. Potanin. Sanktpeterburg: Tipografija Imperatorskoj Akademii nauk, 70–76.

Bao Chaolu & Gu Lasen. 1988. *Dongbuyuguyu huayu cailiao*. (Menggu yuzu yuyan fangyan yanjiu congshu 018.) Huhehaote: Neimenggu renmin chubanshe.

Bao Chaolu & Gu Lasen & Chen Naixiong. 1990. *Dongbuyuguyu he mengguyu*. (Menggu yuzu yuyan fangyan yanjiu congshu 016.) Huhehaote: Neimenggu renmin chubanshe.

Barfield, Thomas J. 1992. *The Perilous Frontier. Nomadic Empires and China, 221 BC to AD 1757*. Cambridge & Oxford: Blackwell Publishers.

Bartholomae, Christian. 1904. *Altiranisches Wörterbuch*. Berlin: Walter de Gruyter (reprint 1960).

Basangov, B. B. 1963. *Russko-kalmyckij slovaŕ*. Élista: Kalmyckoe gosudarstvennoe izdateľstvo.

Baskakov, Nikolaj A. 1957. Predislovie. In: Ramstedt, Gustaf J. 1957b. *Vvedenie v altajskoe jazykoznanie: morfologija* (Russian translation of Ramstedt 1952 by L.S. Slon). Moskva: Izdateľstvo inostrannoj literatury, 5–20.

Baskakov, Nikolaj A. 1960. *Tjurkskije jazyki*. Moskva: Izdateľstvo vostočnoj literatury.

Baskakov, Nikolaj A. 1966. Karakalpakskij jazyk. In: *JN* II, 301–319.

Baskakov, Nikolaj A. 1971. Areaľnaja konsolidacija drevnejšix narečij i genetičeskoe rodstvo altajskix jazykov. In: *Problema obščnosti altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 315–321.

Baskakov, Nikolaj A. 1981. *Altajskaja semja jazykov i jeje izučenie*. Moskva: Nauka.
Baskakov, Nikolaj A. 1993. Tjurkskie jazyki. In: *Altajskie jazyki*. Moskva: Nauka – Vostočnaja literatura, 187–282.
Baskakov, Nikolaj A. 1997. Karakalpakskij jazyk. In: *TJ* 264–271.
Bawden, Charles. 1997. *Mongolian-English Dictionary*. London – New York: Kegan Paul.
Baxter, William H. & Sagart, Laurent. 2014. *Old Chinese: A New Reconstruction*. Oxford: University Press.
Beckwith, Christopher I. 2007. *Koguryo. The Language of Japan's Continental Relatives. An Introduction to the Historical-Comparative Study of the Japanese-Koguryoic Languages*. Leiden: Brill.
Beckwith, Christopher I. 2009. *Empires of the Silk Road. A History of Central Eurasia from the Bronze Age to the Present.* Princeton & Oxford: Princeton University Press.
Beffa, Marie-Lise & Mamayon, Roberte. 1983. Les langues mongoles. *Études mongoles* 14, 121–169.
Benedict, Paul K. 1972. *Sino-Tibetan. A Conspectus*. Cambridge: University Press.
Benedict, Paul K. 1990. *Japanese/Austro-Tai*. Ann Arbor: Karoma.
Bengtson, John D. & Blažek, Václav. 2005. Sergei Anatolyevich Starostin (1953–2005). *Journal of Indo-European Studies* 33, 307–314.
Bengtson, John D. & Blažek, Václav. 2009. Ainu and Austric: Evidence of Genetic Relationship. *Journal of Language Relationship* 2, 1–24.
Bentley, John R. 2001. The origin of man'yōgana. *Bulletin of the School of Oriental and African Studies*. 64/1, 59–73. https://doi.org/10.1017/S0041977X01000040
Bentley, John R. 2010 (reprint of 2008). *A Linguistic History of the Forgotten Islands. A Reconstruction of the Proto-language of the Southern Ryūkyūs*. Folkestone: Global Oriental.
Benzing, Johannes. 1953a. *Einführung in das Studium der altaischen Philologie und der Turkologie*. Wiesbaden: Harrassowitz.
Benzing, Johannes. 1953b. Remarques sur les langues tongouses et leus relations avec les autres langues dites 'altaiques'. *Ungarische Jahrbücher* 25, 109–118.
Benzing, Johannes. 1955a. *Die tungussischen Sprachen: Versuch einer vergleichender Grammatik*. Abhandlungen der Geistes– und Sozialwissenschaftlichen Klasse Jahrgang 1955, Nr. 11 – Akademie der Wissenschaften und der Literatur, Mainz (Wiesbaden: Steiner 1956).
Benzing, Johannes. 1955b. *Lamutische Grammatik. Mit Bibliographie, Sprachproben und Glossar*. Wiesbaden: Steiner.
Benzing, Johannes. 1959. Das Tschuwaschische. In: *PTF* 695–751.
Benzing, Johannes. 1985. *Kalmückische Grammatik zum Nachschlagen.* Wiesbaden: Harrassowitz (Turcologica, 1).
Benzing, Johannes. 1993. *Bolgarisch-tschuwaschische Studien.* Wiesbaden: Harrassowitz (Turcologica, 12).
Berezine, Ilya N. 1848. *Recherches sur les dialectes musulmans*, I: *Système des dialectes turcs*. Kazan: Imprimerie de l'université.
Berta, Árpád. 1998a. Tatar and Bashkir. In: *The Turkic Languages*, ed. by Lars Johanson & Éva Ágnes Csató. London & New York: Routledge, 283–300.
Berta, Árpád. 1998b. West Kipchak Languages. In: *The Turkic Languages*, ed. by Lars Johanson & Éva Ágnes Csató. London & New York: Routledge, 301–317.

Berta, Árpád & Róna-Tas, András. 2011. *West Old Turkic. Turkic Loanwords in Hungarian.* Part 1: *Introduction*, *A-K*; Part 2: *L-Z*, *Conclusions, Apparatus*. Wiesbaden: Harrassowitz (Turcologica, 84).

Bertagaev, T. A. 1968. Mongoľskie jazyki: Vvedenie. In: *Jazyki narodov SSSR. Mongoľskie, tunguzo-maňčžurskie i paleoaziatskie jazyki*, eds. Vinogradov, V. V. i kol. Leningrad: Nauka 1968, 7–12.

Bertagaev, T.A. 1968. Burjatskij jazyk. In: *JN* V, 13–34.

Bettelheim, Bernard J. 1846. *English-Loochooan dictionary*. *With many phrases in the higher style of the literati, and a glossary of derivatives from the Chinese language, Ms. finished in 1851, presented to British Museum in 1867*. <http://www.bl.uk/manuscripts/Viewer.aspx?ref=or_40_fs001r>

Bianchi, Thomas-Xavier. 1831. *Vocabulaire français-turc à l'usage des interprètes: des commerçants, des navigateurs, et autres voyageurs dans le Levant*. Paris: Éverat, imprimeur de la Société de géographie.

Bianchi, Thomas-Xavier. 1843. *Dictionnaire français-turc à l'usage des agents diplomatiques et consulaires, des commerçants, des navigateurs et autres voyageurs dans le Levant*. Paris: Dondey-Dupré.

Bičanová, Lenka & Blažek, Václav. 2014. Indo-European Personal Pronouns: Limits of their internal reconstruction. *Linguistica Brunensia* 62/1, 29–55.

Bičurin, Nikita Ja. (Iakinf). 1950–1953. *Sobranie svedenij o narodax, obitavšix v Srednej Azii v drevnie vremena*, I-III. Moskva-Leningrad: Izdateľstvo Akademii nauk SSSR (first edition Sankt Petersburg 1851). <http://www.vostlit.info/Texts/Dokumenty/China/Bicurin/bicurin.htm>

Biišev, A. 1965. Sootvetstvie *-r//-z* v altajskich jazykach. In: *Issledovanija po ujgurskomu jazyku*, ed. A.T. Kajdarov. Alma-Ata: Akademija nauk Kazaxskoj SSR, 192–205.

Bimbaev, Ratnadžab. 1913. *Russko-mongoľskij slovaŕ razgovornogo jazyka na xalxaskom naréčii*. Troickosavsk.

Bimbaev, Ratnadžab. 1916. *Mongoľsko-russkij slovaŕ*. Irkutsk.

Birtalan, Ágnes. 2003. Oirat. In: Janhunen, Juha (ed.). *The Mongolic Languages*. London: Routledge, 210–228.

Bitkeeva, A. N. et al. 2005. *Endangered Languages of Indigenous Peoples of Siberia*. Moscow: UNESCO Moscow Office.

Bizakov, Sejdin. 2014. *Mir tjurkskix narodov. Istoriko-ėtnografičeskie očerki*. Almaty: Izdateľstvo Geografijadan Respublikalyk atauly mektep.

Bläsing, Uwe. 2003. Kalmuck. In: *The Mongolic Languages*, ed. By Juha Janhunen. London: Routledge, 229–247.

Blagova, G.F. 1997. Čagatajskij jazyk. In: *TJ*, 148–159.

Blagova, G.F. 2002. Karlucko-ujgurskaja gruppa. Morfologija (krome glagola). In: *RR*, 339–475.

Blažek, V. 1987. Some notes about new Korean etymologies of G.J. Ramstedt. *Archív orientální* 55, 156–161.

Blažek, V. 1997. Altaic Numerals. *Studia Etymologica Cracoviensia* 2, 33–75. <http://info.filg.uj.edu.pl/zhjij/sec/store/sec-2.pdf>

Re-published in: *Transeurasian Linguistics*, Vol. IV, ed. by Martine Robbeets. London: Routledge 2017 (Critical Concepts in Linguistics), 26–65.

Blažek, Václav. 1998a. Berber Numerals. *Archiv Orientální* 66, 149–168.

Blažek, Václav. 1998b. Uralic Numbers. *Dhumbadji! Journal of the History of Language* 4/1, 3–16.

Blažek, V. 1999. *Numerals. Comparative-Etymological analyses of numeral systems and their implications*. Brno, Spisy Masarykovy university v Brně, FF, No. 321. VII+339, 1999. Chapter 'Altaic Numerals', 102–140. <https://www.phil.muni.cz/jazyk/files/blazek-numerals.pdf>

Blažek, Václav. 2001. Etymologizing the Semitic cardinal numerals of the first decad. In: *New Data and Methods in Afroasiatic Linguistics. Robert Hetzron in Memoriam*, ed. Andrzej Zaborski. Wiesbaden: Harrassowitz, 13–37.

Blažek, V. 2005/2007. Current progress in Altaic etymology. *Folia Orientalia* 52, 237–254.

Blažek, V. 2006–07[2008]. (review of) Martine I. Robbeets: *Is Japanese Related to Korean, Tungusic, Mongolic and Turkic?* (Wiesbaden: Harrassowitz 2005). *Folia Orientalia* 42/43, 2006–07[2008], 467–470.

Blažek, Václav. 2008a. Numerals in Arctic Languages. *Mother Tongue* 13, 197–208.

Blažek, Václav. 2008b. Evgenij Arnoľdovič Chelimskij (Eugen Helimski) (1950–2007). *Linguistica Brunensia. Sborník prací filozofické fakulty brněnské univerzity* A 56, 208–221.

Blažek, Václav. 2009. Koguryo and Altaic. On the role of Koguryo and other Old Korean idioms in the Altaic etymology. *Journal of Philology: Ural-Altaic Studies* 1/1, 13–25.

Blažek, Václav. 2013. Korean Numerals in Altaic Context. In: *Korean within Altaic language and Altaic language within Korean*. Seoul: Asian Cultural Studies Research Institute at Gachon University, 159–171.

Blažek, Václav. 2018. Turkické číslovky v zrcadle turkické dialektologie. In: *Dialektologie a geolingvistika v současné Střední Evropě* III, ed. Zbyněk Holub. Opava: Slezská univerzita v Opavě / Filozoficko-přírodovědecká fakulta / Ústav bohemistiky a knihovnictví, 55–74.

Blažek, Václav & Schwarz, Michal. 2014. Jmenná deklinace v altajských jazycích. *Linguistica Brunensia.* 62/1, 89–98.

Blažek, Václav & Schwarz, Michal. 2015a. Numerals in Mongolic and Tungusic languages. In: *Proceedings of the 12th Seoul International Altaistic Conference. Multidimensional understandings of languages and cultures of Altaic people*. Seoul: The Altaic Society of Korea / Institute of Altaic Studies, Seoul National University, 11–20.

Blažek, Václav & Schwarz, Michal. 2015b. Zájmenná deklinace v altajských jazycích. *Linguistica Brunensia* 63/2, 57–83.

Blažek, Václav & Schwarz, Michal. 2015c. Mongolic personal pronouns: Survey and internal reconstruction of paradigms. *Mongolica Pragensia* '15. *Linguistics, Ethnolinguistics, Religion and Culture*, Volume 8, No. 2, 7–14.

Blažek, Václav & Schwarz, Michal. 2018. Altaic from the Point of View of Tungusic – Past and Present State and Future Prospects. *Türk Dilleri Araştırmaları* 28, 135–156.

Bleichsteiner, R., W.Heissig, and W. A. Unkrig. 1941. *Wörterbuch der heutigen mongolischen Sprache.* Wien: Siebenberg.

Blochet, E. 1915. Le Nom des Turks dans l'Avesta. *The Journal of the Royal Asiatic Society of Great Britain and Ireland*, 1915, 305–308. https://doi.org/10.1017/S0041977X01000040

Blockley 1985 – see Menander.

Blust, Robert. 1978. *Eastern Malayo-Polynesian: A Subgrouping Argument*. In: *Second International Conference on Austronesian Linguistics: Proceedings*, fascicle 1, ed. by S. A. Wurm & Louis Carrington. Canberra: The Australian National University (Pacific Linguistics C-61), 181–234.

Blust, Robert, and Trussel, Stephen. 2018. *The Austronesian comparative dictionary*. <http://www.trussel2.com/acd/>

Bobrovnikov, Aleksandr. 1835. *Grammatika mongoľskogo jazyka*. St. Petersburg.

Bobrovnikov, Aleksandr. 1849. *Grammatika mongoľsko-kalmyckogo jazyka*. Kazań.

Boeschoten, Hendrik. 1998. Uzbek. In: *TL*, 357–378.

Böhtlingk, Otto. 1851. *Über die Sprache der Jakuten. Grammatik, Text und Wörterbuch*. St. Petrsburg: Eggers – Leipzig: Voss.

Boldyrev, Boris. 1987. *Slovoobrazovanie imen suščestviteľnyx v tunguso-mańčžurskix jazykax v sravnitel'no-istoričeskom osveščenii*. Novosibirsk: Nauka.

Boldyrev, Boris V. & Simonov, M.D. 1994. *Russko-ėvenkijskij slovaŕ*. Novosibirsk: Nauka.

Bodrogligeti, András J. E. 2001. *A Grammar of Chagatay*. Munich: Lincon Europa. . (Languages of the World / Materials 155).

Boller, Anton. 1857a. Nachweis dass das Japanische zum Ural-Altäischen Stamme gehört. *Sitzungsberichte der philosophisch-historischen Classe der Kaiserlichen Akademie der Wissenschaften in Wien* 23/3, 393–486, separately published in Wien: Gerold' Sohn.

Boller, Anton. 1857b. Die Pronominalsuffixe des Ural-Altaischen Verbums. *Sitzungsberichte der philosophisch-historischen Classe der kaiserlichen Akademie der Wissenschaften* 25/1, 3–59.

Bomhard, Allen. 2017. A Sketch of Proto-Altaic Phonology. In: Martine Robbeets (ed.), *Transeurasian Linguistics: Critical Concepts in Linguistics*. Vol. II: *Phonology*. London – New York: Routledge, 1–16.

Bormanshinov, Arash. 1963. *Kalmyk Manual*. Cleveland (Ohio): Bell & Howell.

Bormanshinov, Arash & Zagadinov, G. 1963. *Kalmyk-English Dictionary*. Cleveland (Ohio): Bell & Howell.

Bouda, Karl. 1953. Dravidisch und Uralaltaisch. *Ural-Altaische Jahrbücher* 25, 161–173.

Bouda, Karl. 1960. Die Verwandtschaftsverhältnisse des Giljakischen. *Anthropos* 55, 355–415.

Boyle, J.A. 1968. Kirakos of Ganjak on the Mongols. *Central Asiatic Journal* 8, 199–214.

Brockelmann, Carl. 1928. *Mitteltürkischer Wortschatz nach Maḥmūd al-Kāšġarīs Dīvān luġāt at-Turk*. Leipzig: Harrassowitz.

Brockelmann, Carl. 1952. Zu den alttürkischen Inschriften aus dem Jenisseigebiet. *Ural-Altaische Jahrbücher* 24/1–2, 137–142.

Budagov, Lazaŕ Z. 1844. *Kratkij učebnik tatarskogo jazyka*. Tiflis.

Budagov, Lazaŕ Z. 1857. *Praktičeskoe rukovodstvo k turecko-tatarskomu aderbejdžanskomu narečiju*. Moskva.

Budagov, Lazaŕ Z. 1869–71. *Sravniteľnyj slovaŕ turecko-tatarskix naŕečij*, 1–2. Sankt-Peterburg: Imperatorskaja Akademija nauk.

Budenz, József. 1862–1863. Csuvas közlések és tanulmányok [Notes and studies in Čuvaš]. *Nyelvtudományi Közlemények* 1, 14–68.

Budenz, József. 1864. Némely látszólagos képtelenségek a csuvas – török hangviszunyokban. *Nyelvtudományi közlemények* 3, 234–248.

Budenz, József. 1873. Jelentés Vámbéry Á. magyar-török szóegyeztetéseiről [An account of Á. Vámbéry's Hungarian-Turkic word comparisons]. *Nyelvtudományi Közlemények* 10, 67–135.

Bugaeva, T.G. 1984. K ėtimologii cvetooboznačenij ‚zelenyj – sinij' v korejskom i drugix altajskix jazykax. In: *Altajskie ėtimologii*, ed. by O.P. Sunik. Leningrad: Nauka, 178–188.

Büge, Eugen. 1887. *Ueber die Stellung des Tungusischen zum Mongolisch-Türkischen*. Halle: Inaugural-Dissertation.

Bukin, Iš-Mehmet. 1883. *Russko-kirgizskij i Kirgizsko-russkij slovaŕ*. Taškent: Laxtin.

Bukin, Iš-Mehmet. 1894. *Slovaŕ russko-kirgizskij*. Orenburg.

Bukin, Iš-Mehmet. 1897. *Kirgizsko-russkij slovaŕ*. Orenburg.

Bukin, Iš-Mehmet. 1899. *Russko-kirgizskij slovaŕ*. Orenburg.

Bulatova, Nadežda Ja. 2003. Mestoimenija v sibirskoj gruppe tunguso-mańčžurskix jazykov. *Acta Linguistica Petropolitana*, Trudy Instituta lingvističeskix issledovanij, Tom I, časť 3, 171–236.

Burykin, A. A. 1984. Drevnejšie substratnye i adstratnye komponenty v leksike tungusomańčžurskix jazykov. In: *Lingvističeskaja rekonstrukcija i drevnejšaja istorija Vostoka*, I. Moskva: Nauka, 20–23.

Burykin, A. A. 1986. K izučeniju imen čislitel˙nyx v altajskix jazykax. In: *Permanent International Altaistic Conference* 29: *Istoriko-kuľturnye kontakty narodov altajskoj jazykovoj obščnosti. Tezisy dokladov XXIX sessii postojannoj meždunarodnoj altaističeskoj konferencii*, II. *Lingvistika* (Taškent, sentjabŕ 1986). Moskva: Nauka, 29–31.

Burykin, A. A. 1999. Morphological aspects of the language of the Jurchen script. In: Janhunen, Juha & Rybatzki, Volker (eds.). *Writing in the Altaic World*. *Proceedings of the 41st Annual Meeting of the Permanent International Altaistic Conference*. Helsinki: *Studia Orientalia*, Vol. 87. Finnish Oriental Society, 1999, 29–39.

Burykin, A.A. 2000. Ėvenkijskie i ėvenskie ėtnonimy Oxotskogo poberež'ja. *Jazyki i folklor* 7. <http://www.zaimka.ru/to_sun/burykin2.shtml>

Cabolov, Ruslan L. 2001–2010. *Ėtimologičeskij slovaŕ kurdskogo jazyka*, I-II. Moskva: Vostočnaja literatura.

Carr, Michael. 1992. *Wa* 倭 *Wa* 和 Lexicography. *International Journal of Lexicography* 5.1, 1–30. https://doi.org/10.1093/ijl/5.1.1

Carradori, Arcangelo. 1650. *Il dizionario turco-ottomano*. Ms.

Castrén, Matthias Alexander. 1845[1846]. Anteckningar om Samojediskans förvandtskap med de Finska Språken. *Suomi: Tidskrift i fosterländska ämnen* 5, 177–186.

Castrén, Matthias Alexander. 1850. *De affixis personalibus linguarum altaicarum: Dissertatio.* Helsingfors: Frenckell. The German translation Über die Personalsuffixe in den altaischen Sprachen, in: M.A. Castrén: *Kleine Schriften*, ed. A. Schiefner. St. Petersburg 1862, 151–222.

Castrén, Matthias Alexander. 1854. *Grammatik der samojedischen Sprachen*. St. Petersburg: Kaiserliche Akademie der Wissenschaften.

Castrén, Matthias Alexander. 1856. *Grundzuge einer tungusischen Sprache nebst Kurzem*

Wörterverzeichnis, herausgegeben von Anton Schiefner. St. Petersburg: Kaiserliche Akademie der Wissenschaften.

Castrén, Mathias Alexander. 1857a. *Versuch einen koibalischen und karagassische Sprachlehre*, hrsg. von Anton Schiefner. St. Petersburg: Kaiserliche Akademie der Wissenschaften. <https://archive.org/details/malexandercastr01castgoog>

Castrén, Matthias A. 1857b. *Versuch einer burjätischen Sprachlehre nebst kurzem Wörterverzeichniss*, herausgegeben von Anton Schiefner. St. Petersburg: Kaiserliche Akademie der Wissenschaften.

Castrén, Matthias Alexander. 1858. *Versuch einer jenissei-ostjakischen und kottischen Sprachlehre nebst Wörterverzeichnissen*. Sankt Petersburg: Kaiserliche Akademie der Wissenschaften.

Castren, Matthias Alexander. 1926. Osnovy izučenija tungusskogo jazyka. In: *Tungussko-russkij slovaŕ*. Irkutsk, 1–64.

Chamberlain, Basil Hall, assisted by M. Ueda. 1889. Vocabulary of the most ancient words of the Japanese language. *Transactions of the Asiatic Society of Japan* 16, 225–285.

Chamberlain, Basil Hall. 1895. *Essay in aid of a grammar and dictionary of the Luchuan language*. Yokohama: Kelly & Walsh (*Transactions of the Asiatic Society of Japan* 23, Supplement).

Chaoke. 2006. *Xiandai xiboyu kouyu yanjiu*. Beijing: Minzu chubanshe.

Chaoke. 2009a. *Ewenkeyu canshu yufa*. Beijing: Zhongguo shehui kexue chubanshe.

Chaoke. 2009b. *Nanmu elunchunyu yanjiu*. Beijing: Minzu chubanshe.

Chaolu Wu. 1996. *Daur*. München-Newcastle: Lincom Europa.

Chavannes, Édouard. 1903. *Documents sur les Tou-kiue (Turcs) occidentaux*. St. Petersburg: Académie Impériale de Sciences (Sbornik trudov orxonskoj ėkspedicii, VI).

Chinbat, E. 2007. *Mongolian-English Dictionary*. Ulaanbaatar.

Chinggaltai. 1963. *A Grammar of the Mongol Language*. New York: Ungar.

Chinggeltei. 2002. On the Problems of Reading Kitan Characters. *Acta Orientalia Academiae Scientiarum Hungaricae* 55, 99–114. https://doi.org/10.1556/AOrient.55.2002.1-3.8

Chun-Shu, Chang. 2007. *The Rise of the Chinese Empire: Nation, state, & imperialism in early China*, ca. *1600 B.C. – A.D. 8*. Ann Arbor: The University of Michigan Press.

Cincius, Vera I. 1947. *Očerk grammatiki ėvenskogo (lamutskogo) jazyka. Fonetika i morfologija*. Leningrad: Gosudarstvennoe učebno-pedagogičeskoe izdateľstvo.

Cincius, Vera I. 1948. Problemy sravniteľnoj grammatiki tunguso-mańčžurskix jazykov. *Izvestija Akademii nauk SSSR*, Otdel literatury i jazyka, 1948, tom VII, vyp. 6, 518–526.

Cincius, Vera I. 1949. *Sravnitel'naja fonetika tunguso-mańčžurskix jazykov*. Leningrad: Učpedgiz. <http://www.evenkiteka.ru/stellages/linguistics/sravnitelnaya-fonetika-tunguso-manchzhurskikh-yazykov/>

Cincius, Vera I. 1971a. Voprosy sravniteľnoj leksikologii altajskix jazykov. In: *Problema obščnosti altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 77–89.

Cincius, Vera I. 1971b. Altajskie terminy rodstva i problema ix ėtimologii. In: *Problema obščnosti altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 127–138.

Cincius, Vera I. 1972. Nekotoryje zamečanija k rekonstrukcii V.M. Illičem-Svityčem konsonantnoj sistemy altajskix jazykov. In: *Konferencija po sravniteľno-istoričeskoj grammatike*

indoevropejskix jazykov (12–14 dekabrja 1972). *Predvariteľnye materialy*, ed. by S.B. Bernštejn, V.V. Ivanov, V.A. Dybo, R.V. Bulatova. Moskva: Nauka / Institut slavjanovedenija i balkanistiki AN SSSR, 87–89.

Cincius, Vera I. 1975–1977. *Sravnitel'nyj slovaŕ tungusoman'čžurskich jazykov. Materialy k ėtimologičeskomu slovarju*, I-II. Leningrad: Nauka. Review: Doerfer, Gerhard: Zum tungusischen Lexikon, *Orientalistische Literaturzeitung* 74/1, 1979, 160–162.

Cincius, Vera I. 1982. *Negidal'skij jazyk: issledovanija i materialy*. Moskva-Leningrad: Nauka.

Cincius, Vera I. 1984a. Paraleľnye sinonimičeskie rjady v jazykax altajskoj semji i ix roľ pri sravniteľno-istoričeskom izučenii leksiki. In: *Altajskie ėtimologii*, ed. by V.I. Cincius & L.V. Dmitrieva. Leningrad: Nauka, 7–17.

Cincius, Vera I. 1984b. Ėtimologii altajskix leksem s anlautnymi pridyxateľnymi smyčnymi gubno-gubnym **p'* i zadnejazyčnym **k'*. In: *Altajskie ėtimologii*, ed. by V.I. Cincius & L.V. Dmitrieva. Leningrad: Nauka, 17–129.

Cincius, Vera I. & Bugaeva, T.G. 1979. K ėtimologii nazvanij metallov i ix splavov v altajskix jazykax. In: *Issledovanija v oblasti ėtimologii altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 18–52.

Cincius, Vera I. & Letjagina, N.I. 1978. K istorii form množestvennosti v altajskix jazykax. In: *Očerki sravniteľnoj morfologii altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 197–231.

Cincius, Vera I. & Rišes, Ljubov D. 1952. *Russko-ėvenskij slovaŕ. S priloženiem grammatičeskogo očerka ėvenskogo jazyka*. Moskva: Gosudarstvennoe izdateľstvo inostrannyx i nacionalnyx slovarej.

Clark, Larry. 1998. Chuvash. In: *The Turkic Languages*, ed. by Lars Johanson & Éva Ágnes Csató. London & New York: Routledge, 434–452.

Clark, Larry V., updated by Hartmut Walravens. 2006. A Bibliography of Manchu-Tungus Dictionaries. In: Walravens, Hartmut (ed.) 2006, 113–172.

Clauson, Sir Gerard. 1956. The case against the Altaic theory. *Central Asiatic Journal* 2, 181–187.

Clauson, Sir Gerard. 1959. The Turkish Numerals. *Journal of the Royal Asiatic Society* 91, 19–31.

Clauson, Sir Gerard. 1960a. *Turkish and Mongolian studies*, ed. by János Eckmann, Agâh S. Levend & Mecdut Mansuroğlu. London: The Royal Asiatic Society, Prize Publication Fund, Vol. XX.

Clauson, Sir Gerard. 1960b. Turk, Mongol, Tungus. *Asia Major* 8/1, 105–123.

Clauson, Sir Gerard. 1960c. The Turkish elements in 14th century Mongolian. *Central Asiatic Journal*, 5/4, 301–316.

Clauson, Sir Gerard. 1961. The Initial Labial Sounds in the Turkish Languages. *Bulletin of the School of Oriental and African Studies*, 24/2, 298–306. https://doi.org/10.1017/S0041977X00091448

Clauson, Sir Gerard. 1962. The Concept of 'Strength' in Turkish. *Németh Armağani*, Ankara: Türk Tarih Kurumu Basimevi, 93–101.

Clauson, Sir Gerard. 1964. Turks and Wolves. *Studia Orientalia* 28:2, 1–22.

Clauson, Sir Gerard. 1969. A lexicostatistical appraisal of the Altaic theory. *Central Asiatic Journal* 13/1, 1–23 (Russian tr. Leksikostatističeskaja ocenka altajskoj teorii. *Voprosy jazykoznanija* 1969/5, 22–41).

Clauson, Sir Gerard. 1970. The Origin of the Turkic Runic Alphabet. *Acta Orientalia Academiae Scientiarum Hungaricae* 32, 51–76.

Clauson, Sir Gerard. 1972. *An etymological dictionary of pre-thirteenth-century Turkish*, Volume 1. Oxford: Clarendon Press.

Clauson, Sir Gerard. 1973a. Philology and Archaeology. *Antiquity* 47, 37–42.

Clauson, Sir Gerard. 1973b. Nostratic. *Journal of the Royal Asiatic Society of Great Britain and Ireland* 1973/1, 46–55. https://doi.org/10.1017/S0035869X00130436

Clauson, Sir Gerard. 1975. The Foreign Elements in Early Turkish. In: *Researches in Altaic Languages*, ed. by Louis Ligeti. Budapest: Akadémiai Kiadó, 43–47.

Clodius, Johann Christian. 1729. *Grammatica turcica necessariis regulis præcipuas linguæ difficultates illustrans ac aliquot colloquiis et sententiis turcicis aucta*. Lipsiæ (Leipzig): Deer.

Clodius, Johann Christian. 1730. *Compendiosum Lexicon Latino-Turcico-Germanicum cum Praefatione de lingua et litteratura Turcarum. Accessit triplex index, ac Grammatica Turcica*. Lipsiæ (Leipzig): Deer.

Collado, Diego. 1632a. *Ars Grammaticae Iaponicae Lingvae*. Rome: Sacra Congregatio de Propaganda Fide. Details see Osterkamp 2012. English translation by Richard L. Spear (1975).

Collado, Diego. 1632b. *Dictionarivm sive thesavri lingvæ Iaponicæ compendivm*, Rome: Sacra Congregatio de Propaganda Fide.

Collinder, Björn. 1965. Hat das Uralische Verwandte? *Acta Universitatis Upsaliensis*, *NS* 1.4, 109–180.

Cooper, Michael. 1976. The Nippo Jisho – Vocabulario da Lingoa de Iapam com Adeclaracao em Portugues, Feito por Alguns Padres, e Irmaos da Companhia de Iesu. *Monumenta Nipponica* 31/4, 417–430.

Corff, Oliver, Kyoko Maezono, Wolfgang Lipp, Dorjpalam Dorj, Göröochin Gerelmaa, Aysima Mirsultan, Réka Stüber, Byambajav Töwshintögs, Xieyan Li (eds.). 2013. *Auf kaiserlichen Befehl erstelltes Wörterbuch des Manjurischen in fünf Sprachen. 'Fünfsprachenspiegel'. Systematisch angeordneter Wortschatz auf Manjurisch, Tibetisch, Mongolisch, Turki und Chinesisch.* Wiesbaden: Harrassowitz.

Csató, Éva Ágnes. & Karakoç, Birsel. 1998. Noghay. In: *The Turkic Languages*, ed. by Lars Johanson & Éva Ágnes Csató. London & New York: Routledge, 333–343.

Cydendambajev, C. B. & Imexenov, M. N. 1962. *Kratkij russko-burjatskij slovaŕ*. Moskva: Gosudarstvennoe izdateľstvo inostrannyx i nacionaľnyx slovarej.

Čanyšev, Ja. A. 1985. K ėtimologii tjurkskix čislitel'nyx pervogo desjatka. In: K.M. Musaev (ed.), *Teorija i praktika ėtimologičeskix issledovanij.* Moskva: Nauka, 78–82.

Čečenov, A.A. 1997. Poloveckij jazyk. In: *TJ*, 110–115.

Čečenov, A.A. – Axmatov, I.X. 1997. Karačaevo-balkarskij jazyk. In: *TJ*, 272–285.

Čeremisov, Konstantin M. 1951. *Burjat-mongol'sko-russkij slovaŕ.* Moskva, Gosudarstvennoe izdatel'stvo inostrannych i nacional'nych slovarej 1951.

Čeremisov, Konstantin M. 1973. *Burjatsko-russkij slovaŕ.* Moskva, Sovetskaja ėnciklopedija 1973.

Damdinsürėngijn, Altangėrėl. 1993. A New English-Mongolian Dictionary. *Ulaanbaatar – Krasnojarsk: Krasnojarsk Rabočy.*

Damdinsürėngijn, Altangėrėl. 1998. *Angli-Mongol tol' / English-Mongolian Dictionary*. Ulaanbaatar: Interpress.

Davids, Arthur Lumley. 1832. *A grammar of the Turkish language: with a preliminary discourse on the language and literature of the Turkish nations, a copious vocabulary, dialogues, a collection of extracts in prose and verse, and lithographed specimens of various ancient and modern manuscripts*. London: Parruby & Allen and Taylor.

Davids, Arthur Lumley. 1836. *Grammaire turke précédée d'un discours préliminaire sur la langue et la littérature des nations orientales: avec un vocabulaire volumineux, des dialogues, un recueil d'extraits en prose et en vers*, traduite de l'anglais par Madame Sarah Davids, mére de l'auteur. Londres: Taylor.

DEDR = A Dravidian Etymological Dictionary, by Thomas Burrow and Murray B. Emeneau. Oxford: Clarendon Press 1984.

Deutsch-mandjurisches Worterverzeichnis, nach H. C. von d. Gabelentz' *Mandschu-deutschem Worterbuch* / durchges. von Hartmut Walravens und Martin Gimm. Wiesbaden: Steiner 1978.

Di Cosmo, Nicola & Bao, Dalizhabu. 2003. *Manchu-Mongol Relations on the Eve of the Qing Conquest. A Documentary History.* Leiden & Boston: Brill.

Dmitrieva, L.V. 1966. Jazyk barabinskix tatar. In: *Jazyki narodov SSSR*, II: *Tjurkskie jazyki*, Vinogradov, V. V. i kol (eds). Leningrad: Nauka, 155–172.

Dmitrieva, L.V. 1979. Iz ėtimologij nazvanij rastenij v tjurkskix, mongol'skix i tungusomańčžurskix jazykax. In: *Issledovanija v oblasti ėtimologii altajskix jazykov*. Leningrad: Nauka, 135–191.

Dmitrieva, L.V. 1984. Ėtimologii geografičeskix apelljativov v tjurkskix i drugix altajskix jazykax. In: *Altajskie ėtimologii*, ed. by V.I. Cincius & L.V. Dmitrieva. Leningrad: Nauka, 130–177.

Dobrovits, Mihály. 2011. The Altaic world through Byzantine eyes: some remarks on the historical circumstances of Zemarchus' journey to the Turks (AD 569–570). *Acta Orientalia Academiae Scientiarum Hungaricae* 64/4, 373–409. <http://www.jstor.org/stable/43282429>

Doerfer, Gerhard. 1963. Bemerkungen zur Verwandtschaft der sog. altaische Sprachen. In: *TMEN* I, 51–105.

Doerfer, Gerhard. 1964. Klassifikation und Verbreitung der mongolischen Sprachen. In: *Handbuch der Orientalistik*, 5. Bd. *Altaistik*, 2. Abschnitt: *Mongolistik*. Leiden – Köln: Brill, 35–50.

Doerfer, Gerhard. 1965. *Ältere westeuropäische Quellen zur kalmückischen Sprachgeschichte* (Witsen 1692 bis Zwick 1827). Wiesbaden: Harrassowitz (*Asiatische Forschungen* 18).

Doerfer, Gerhard. 1966. Zur Verwandtschaft der altaischen Sprachen. *Indogermanische Forschungen* 71, 81–123.

Doerfer, Gerhard. 1967. Urtungusisch **-ï*, **-i*, **-u*, **-ü* im Evenkischen. *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 117, 103–118.

Doerfer, Gerhard. 1968a. Die Entsprechung der türkischen Langvokale im Tungusischen. Ural-Altaische Jahrbücher 40 (1–2), 39–49.

Doerfer, Gerhard. 1968b. Zwei wichtige Probleme der Altaistik. *Journal de la Société Finno-Ougrienne* 69.4, 1–21.

Doerfer, Gerhard. 1970. Der Name der Mongolen bei Rašīd ad-Dīn. *Central Asiatic Journal* 14/1–3, 68–77.

Doerfer, Gerhard. 1971a. Gedanken zur Gestaltung eines idealen Türkischen Etymologischen Wörterbuchs. *Orientalistische Literaturzeitung* 66, 9–108, 437–454.

Doerfer, Gerhard. 1971b. *Khalaj Materials*. Bloomington: Indiana University Publications – Uralic and Altaic Series.

Doerfer, Gerhard. 1972. Možno li problema rodstva altajskich jazykov razrešiť s pozicii indoevropeistiki? *Voprosy jazykoznanija* 1972/3, 55–66.

Doerfer, Gerhard. 1973a. Das Kur-Urmiische und seine Verwandten. Zentralasiatische Studien 7, 567–99.

Doerfer, Gerhard. 1973b. *Lautgesetze und Zufall: Betrachtungen zum Omnicomparativismus.* Innsbrucker Beiträge zur Sprachwissenschaft 10.

Doerfer, Gerhard. 1974. Ist das Japanische mit den altaischen Sprachen verwandt? *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 124, 103–142.

Doerfer, Gerhard. 1975a. Ist Kur-Urmiisch ein nanaischer Dialekt? *Ural-Altaische Jahrbücher* 47, 51–63.

Doerfer, Gerhard. 1975b. Bemerkungen zur Altaistik. In: *TMEN* IV, 318–347.

Doerfer, Gerhard. 1975–1976. Proto-Turkic: Reconstruction Problem. *Türk Dilleri Araştırmaları Yıllığı belleten* 1975–1976, 1–59.

Doerfer, Gerhard. 1978a. Classification Problems of Tungus. In: *Tungusica* I, ed, by G. Doerfer and M. Weiers. Wiesbaden: Otto Harrassowitz, 1–26.

Doerfer, Gerhard. 1978b. Urtungusisch **ö*. In: *Tungusica*, I, ed, by G. Doerfer and M. Weiers. Wiesbaden: Harrassowitz, 66–116.

Doerfer, Gerhard. 1981a. The Conditions for proving the genetic relationship of languages. *The Bulletin of the International Institute for Linguistic Sciences, Kyoto Sangyo University*, Vol. II, No. 4, 38–58.

Doerfer, Gerhard. 1981b. Bazisnaja leksika: altajskaja problema. *Voprosy jazykoznanija* 1981/4, 35–44.

Doerfer, Gerhard. 1981–82. Materialien zu türk. *h–* (I-II). *Ural-Altaisches Jahrbücher* NF 1–2, 93–141, 138–168.

Doerfer, Gerhard. 1983. Das Birare. *Journal de la Société Finno-Ougrienne* 78, 1–19.

Doerfer, Gerhard. 1984a. The problem of rhotacism / zetacism. *Central Asiatic Journal* 28/1–2, 36–42.

Doerfer, Gerhard. 1984b. Die Körperteilbezeichnungen des Kili. *Nyelvtudományi Közlemények* 86, 238–246.

Doerfer, Gerhard. 1984c. Prolegomena zu einer Untersuchung der dem tungusischen und mongolischen gemeinsamen Wörter. *Journal de la Société Finno-Ougrienne* 79, 65–85.

Doerfer, Gerhard. 1985a. The Mongol-Tungus connection. *Language Research* 21, 135–144.

Doerfer, Gerhard. 1985b. *Mongolica-Tungusica.* (Tungusica, 3). Wiesbaden: Otto Harrassowitz.

Doerfer, Gerhard. 1988a. Zetacism/Sigmatism Plays No Rôle. *Central Asiatic Journal* 32/1–2, 61–63.

Doerfer, Gerhard. 1988b. *Grammatik des Chaladsch*. Wiesbaden: Harrassowitz.

Doerfer, Gerhard. 1988c. *Grundwort und Sprachmischung: eine Untersuchung an Hand*

von Körperteilbezeichnungen. Stuttgart: Steiner (Münchener ostasiatische Studien, vol. 47).

Doerfer, Gerhard. 1992. Mongolica im Alttürkischen. In: *B. Lewin zu Ehre. Festschrift aus Anlass seines* 65. *Geburtstages*, Bd. III: *Korea*. Bochum: Brockmayer (*Bochumer Jahrbuch zur Ostasienforschung* 14), 39–56.

Doerfer, Gerhard. 1993. The older Mongolian layer in Ancient Turkic. In: *Türk Dilleri Araştırmaları* 3, 79–86.

Doerfer, Gerhard. 1998. Turkic Languages of Iran. In: *The Turkic Languages*, ed. by Lars Johanson & Éva Ágnes Csató. London & New York: Routledge, 273–282.

Doerfer, Gerhard, Hesche, Wolfram & Scheinhardt, Hartwig. 1980. *Lamutisches Wörterbuch*. Wiesbaden: Harrassowitz.

Doerfer, Gerhard & Knüppel, Michael. 2004. *Etymologisch-Ethnologisches Wörterbuch tungusischer Dialekte (vornehmlich der Mandschurei)*. Hildesheim-Zürich-New York: Olms Verlag.

Doerfer, Gerhard & Knüppel, Michael. 2013. Armanisches Wörterbuch. Nordhausen: Traugott Bautz.

Dolgopolsky, Aharon. 1984. On personal pronouns in the Nostratic languages. In: *Linguistica et Philologica. Gedankschrift für Björn Collinder*, ed. O. Gschwantler et alii. Wien: Braumüller, s. 65–112.

Dolgopolsky, Aaron. 1989. Proisxoždenie altajskix vosxodjaščix diftongov v svete dannyx vnešnego sravnenija / On the origin of the Altaic ascending diphthongs in the light of external comparison. Paper presented at the International Conference *Linguistic Reconstruction and Pre-History of the East* (Moscow, 1989). Ms.

Dolgopolsky, Aaron & Blažek, Václav. 2000. Karl-Heinrich Menges (1908–1999). *Sborník prací filozofické fakulty brněnské university / Linguistica Brunensia* A 48, 171–174.

Dpal-ldan-bkra-shis et al. 1996. *Language Materials of China's Monguor Minority Huzhu Mongghul and Minhe Mangghuer*. Philadelphia: Department of East Asian Languages and Civilizations, University of Pennsylvania (*Sino-Platonic Papers* 69).

Driem, George van. 2001. *Languages of the Himalaya. An Ethnolinguistic Handbook of the Greater Himalayan Region. Volume one*. (Handbuch der Orientalistik. Zweite Abteilung. Indien). Leiden – Boston – Köln: Brill.

DTS = Drevnetjurkskij slovaŕ by Nadeljaev, V.M., Nasilov, D.M., Tenišev, Ė.R., Ščerbak, A.M. (eds). Leningrad: Nauka 1969.

Duľzon, A.P. 1966. Čulymsko-tjurkskij jazyk. In: *JN* II, 446–466.

Durkin-Meisterernst, Desmond. 2004. *Dictionary of Manichaean Texts*, Vol. III: *Texts from Central Asia and China* edited by Nicholas Sims-Williams, Part 1: *Dictionary of Manichaean Middle Persian and Parthian*. Turnhout (Belgium): Brepols.

Dybo, Anna V. 1986. Ob altajskix nazvanijax pjadej. In: *Permanent International Altaistic Conference* 29: *Istoriko-kuľturnye kontakty narodov altajskoj jazykovoj obščnosti. Tezisy dokladov XXIX sessii postojannoj meždunarodnoj altaističeskoj konferencii*, II. *Lingvistika* (Taškent, sentjabŕ 1986). Moscow: Nauka, 51–54.

Dybo, Anna V. 1988. Ėtimologičeskij material k rekonstrukcii pratungusomańčžurskix nazvanij častej tela. In: *Sinxronija i diaxronija v lingvističeskix issledovanijax*. Moskva: Institut vostokovedenija, 108–127.

Dybo, Anna V. 1990. Inlautnye gutturaľnye v tunguso-maňčžurskom i praaltajskom. In: *Sravniteľno-istoričeskoe jazykoznanie na sovremennom ėtape*. Moskva: Institut slavjanovedenija i balkanistiki, 51–53.

Dybo, Anna V. 1991. Tjurk. **t-*, **d-*. In: *Slavistika. Indoevropeistika. Nostratika*. Moskva: Institut slavjanovedenija i balkanistiki, 50–65.

Dybo, Anna V. 1995. Suďba praaltajskogo **ń-* po tungusomańčžurskim i mongoľskim jazykam. In: *Vladimircevskie čtenija* 3. Moskva.

Dybo, Anna V. 1996. *Semantičeskaja rekonstrukcija v altajskoj ėtimologii. Somatičeskie terminy (plečevoj pojas)*. Moskva: Škola "Jazyki russkoj kuľtury".

Dybo, Anna V. 2000a. Nostratičeskie ėtimologii s načaľnymi nosovymi. In: *Problemy izučenija daľnego rodstva jazykov na rubeže 3–go tysjačeletija. Tezisy i doklady konferencii*. Moskva: Rossijskij gosudarstvennyj gumanitarnyj univerzitet, 31–38.

Dybo, Anna V. 2000b. Mir praaltajcev: Wörter und Sachen. In: *Problemy izučenija daľnego rodstva jazykov na rubeže 3–go tysjačeletija. Tezisy i doklady konferencii*. Moskva: Rossijskij gosudarstvennyj gumanitarnyj univerzitet, 38–48.

Dybo, Anna V. 2006a. Pratjurkskij jazyk – osnova: Imja. In: *Sravniteľno-istoričeskaja grammatika tjurkskix jazykov: Tjurkskij jazyk-osnova; Kartina mira pratjurkskogo ėtnosa po dannym jazyka*, red. Ė.R. Tenišev & A.V. Dybo. Moskva: Nauka, 228–239.

Dybo, Anna V. 2006b. Xronologija tjurkskix jazykov i lingvističeskie kontakty rannyx tjurkov. In: *Sravniteľno-istoričeskaja grammatika tjurkskix jazykov: Pratjurkskij jazyk-osnova – kartina mira pratjurkskogo ėtnosa po dannym jazyka*, ed. A. V. Dybo. Moskva: Nauka, 766–817.

Dybo, Anna V. 2007. *Lingvističeskije kontakty rannych Tjurkov*. Moskva: Vostočnaja literatura RAN.

Dybo, Anna V. (ed.). 2008. *Prirodnoe okruženie i materiaľnaja kuľtura pratjurkskich narodov.* Moskva: Vostočnaja literatura RAN.

Dybo, Anna V. (ed.). 2010. *Dialekty tjurkskix jazykov*. Moskva: Vostočnaja literatura RAN.

Dybo, Anna V. 2016. New trends in European studies on the Altaic problem. *Journal of Language Relationship* 14/2, 71–106.

Dybo, Anna & Levitskaja, L.S. 2002. Oguzskaja gruppa (Fonetika, Morfonologija, Imja). In: *RR*, 7–156.

Dybo, Anna V. & Mudrak, Oleg A. 2006. Očerk pratjurkskogo jazyka-osnovy: Fonetika. In: *Grammatika tjurkskix jazykov – Pratjurkskij jazyk-osnova – Kartiny mira pratjurkskogo ėtnosa po dannym jazyka*, red. Ė.R. Tenišev & A.V. Dybo. Moskva: Nauka, 9–227.

Dybo, Anna V. & Starostin, George. 2008. In defense of the comparative method, or the end of the Vovin controversy. In: *Aspekty komparativistiki* 3, 119–258.

Dybo, Anna V. & Starostin, Sergei. 2003. Tungus-Manchu [comparative and historical phonology]. In: *EDAL* I, 156–163.

Dyrenkova, Nadežda P. 1940. *Grammatika ojratskogo jazyka*. Moskva: Izdateľstvo Akademii nauk SSSR.
<http://nbra.ru/bd/pdf/153.pdf>

Dyrenkova, Nadežda P. 1941. *Grammatika šorskogo jazyka*. Moskva – Leningrad: Izdateľstvo Akademii nauk SSSR. <http://nauka1941–1945.ru/files/pdf/EB_1941_AKS_00000138.pdf>

EDAL = Etymological Dictionary of the Altaic Languages, Part One [*A-K*], Part Two [*L-Z*], Part Three [*Indices*], by Sergei Starostin, Anna Dybo, Oleg Mudrak, with assistance of Ilya Gruntov and Vladimir Glumov. Leiden-Boston: Brill 2003.

Egorov, Vasilij G. 1964. *Ėtimologičeskij slovaŕ čuvašskogo jazyka*. Čeboksary: Čuvašskoe knižnoe izdateľstvo.

Ellis, Robert. 1873. *On Numerals as Signs of Primeval Unity among Mankind*. London: Trübner.

Eminoğlu, Emin. 2010. *Türk dilinin sözlükleri ve sözlükçülük kaynakçası* [Bibliography of Turkic-language dictionaries and lexicography]. Sivas: Asitan Yayıncılık.

Emmerick, Ronald. 1992. Iranian {numerals}. In: *Indo-European Numerals*, ed. by Jadranka Gvozdanović. Berlin: Mouton de Gruyter, 291–345.

Emre, Ahmet C. 1949. *Türk lehçelerinin mukayeseli grameri (ilk deneme). Birinci kitap – Fonetik*. İstanbul: Bürhaneddin erenler matbaası.

Engkebatu et al. 1984. *Dayur kelen-ü üges* (Dagur dictionary). Kökeqota: Huhehot Öbör monggol-un arad-un keblel-ün qoriy-a.

Enhebatu & Xinteke. 1988. *Dawo'eryu he menguyu*. (Menggu yuzu yuyan fangyan yanjiu congshu 004.) Huhehaote: Neimenggu renmin chubanshe.

Enhebatu et al. 2003. Dawoeryu cihui. Menggu yuzu yuyan fangyan yanjiu congshu 605. In: *Dawoer ziliaoji* 4. Beijing: Minzu chubanshe, 47–276.

Erdal, Marcel. 1988. The Turkic Nagy-Szent-Miklos inscription in Greek letters. *Acta Orientalia Hungarica* 42, 221–234.

Erdal, Marcel. 1991. *Old Turkic Word Formation*, I-II. Wiesbaden: Harrassowitz (Turcologica 9).

Erdal, Marcel. 1993. *Die Sprache der wolgabolgarischen Inschriften*. Wiesbaden: Harrassowitz.

Erdal, Marcel. 2004. *A Grammar of Old Turkic*. Leiden – Boston: Brill (Handbook of Oriental studies. Central Asia = Handbuch der Orientalistik. Achte Abteilung, Zentralasien, 3. Bd.).
<http://altaica.ru/LIBRARY/turks/Erdal_OTG.pdf>

Erdal, Marcel. 2007. The Khazar Language. In: *The World of the Khazars: New Perspectives*, ed. by Golden, Peter B., Ben-Shammai, Haggai, Róna-Tas, András. Leiden – Boston: Brill (Handbuch der Orientalistik: Handbook of Uralic studies. 17), 75–108.

Eren, Hasan. 1999a. Rotasizm ve Lambdasizm mi, yoksa Zetasizm ve Sigmatizm mi? *Türk Dili Araştırmaları Yıllığı Belleten* 42, 79–88.

Eren, Hasan. 1999b. *Türk Dilinin Etimolojik sözlüğü*. Ankara.

Ermers Robert. 1999. *Arabic Grammars of Turkic – The Arabic Linguistic Model Applied to Foreign Languages &Translation of Abū Ḥayyān al-Andalusī's Kitāb al-Idrāk li-lisān al-Atrāk*. Leiden – London – Köln: Brill (Studies in Semitic Linguistics, 28).

ESIJ = Ėtimologičeskij slovaŕ iranskix jazykov, I-IV, by Rastorgueva, Vera S. (I-III) & Ėdeľman, Džoj I. (I-IV). Moskva: Vostočnaja literatura 2000–2011.

Ethnologue: Languages of the World, Twenty-first edition, ed. by Simons, Gary F. & Charles D. Fennig. Dallas, Texas: SIL International 2018. Online version: http://www.ethnologue.com.

Eyuboğlu, İsmet Zeki. 1988/1991/1995/1998/2004. *Türk Dilinin Etimoloji Sözlüğü*. Istanbul: Sosyal Yayınları.

Əhmədov, B. 1999. *Azərbaycan dilinin qısa etimoloji lüğəti*. Bakı: Mütərcim.

Faehndrich, Burgel R. M. 2007. *Sketch Grammar of the Karlong variety of Mongghul, and dialectal survey of Mongghul*. Manoa. Doctoral thesis. University of Hawai'i.

Fazylov, Ergaš, M. T. Zijaeva, & A. N. Kononov. 1978. *Izyskannyj dar tjurkskomu jazyku: grammatičeskij traktat XIV v. na arabskom jazyke*. Taškent: Fan.

Fedotov, Mixail. 1996. *Ėtimologičeskij slovaŕ čuvašskogo jazyka*, I-II. Čeboksary: Čuvašskij gosudarstennyj institut gumanitarnyx nauk.

Ferraguto, Pietro. 1611. Dittionario della lingua turchesca. Ms.

Field, Kenneth. 1997. *A Grammatical Overview of Santa Mongolian*. Santa Barbara: University of California Ph.D. Thesis.

Finch, Roger. 1999. The case system of the Altaic languages. *Surugadai University Studies* 18, 87–112.

Fischer, Johann Eberhard. 1995. *Vocabularium Sbiricum* (1747). *Der etymologisch-vergleichende Anteil*, bearbeitet und herausgegeben von János Gulya. Frankfurt am Main – Berlin – Bern – New York – Paris – Wien: Lang (Opuscula Fenno-Ugrica Gottingensia, Bd. VII).

Fortescue, Michael. 2005. *Comparative Chukotko-Kamchatkan Dictionary*. Berlin: Mouton de Gruyter.

Foy, Karl. 1903–1904. Azerbajğanische Studien mit einer Charakteristik des Südtürkischen, I-II. *Mitteilungen des Seminars für orientalische Sprachen an der Friedrich Wilhelms-Universität zu Berlin* 6, 126–193; 7, 197–265.

Francis-Ratte, Alexander Takenobu. 2016. *Proto-Korean-Japanese: A New Reconstruction of the Common Origin of the Japanese and Korean Languages*. The Ohio State University: Ph.D. Dissertation.

Frellesvig, Bjarke. 2010. *A history of the Japanese language*. Cambridge: Cambridge University Press.

Frellesvig, Bjarke & Whitman, John (eds.). 2008. *Proto-Japanese: Issues and Prospects*, ed. by. Amsterdam – Philadelphia: John Benjamins.

Fried, Robert Wayne. 2010. *A grammar of Bao'an Tu, a Mongolic language of northwest China*. State University of New York at Buffalo: Ph.D. Thesis.

Fuchs, W. 1968. Die Manjurische Literatur. In: *Handbuch der Orientalistik*. 1. Abteilung: *Nahe und Mittlere Osten*. ed. B. Spuler. 5. Band. *Altaistik*. 3. Abschnitt: *Tungusologie*. Leiden + Köln: Brill, 1–7.

Funk, D. A. & Tomilov, N. A. 2006. *Tjurkskije narody Sibiri*. Moskva: Nauka.

Futaki, István. 1975. *Tungusische Lehwörter des Ostjakischen*. Wiesbaden: Harrassowitz.

Gabain, Annemarie von. 1941/1950/1974. *Alttürkische Grammatik*, 1./2./ 3. Aufl. Wiesbaden: Harrassowitz.

Gabain, Annemarie von (ed.). 1963/1982 (reed.). *Turkologie*. Leiden: Brill (*Handbuch der Orientalistik*, Bd. 5: *Altaistik*, 1. Abt.: *Der Nahe und der Mittlere Osten*, Abschn. 1).

Gabelenz, Hans Conon von der. 1832. *Eléments de la grammaire mandchoue.* Altenbourg: Comptoir de la littérature. <https://archive.org/details/relationsdediver02th>

Gabelenz, Hans Conon von der. 1864a. Beiträge zur Mandschurischen Konjugationslehre. *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 18, 202–229.

Gabelenz, Hans Conon von der. 1864b. *Mandschu-deutsches Wörterbuch*. Leipzig: Brockhaus.

Gadžieva, N.Z., Levitskaja, L.S. & Tenišev, Ė.R. 1981. Tjurkskie jazyki. In: *Sravniteľno-*

istoričeskoe izučenie jazykov raznyx semej – Sovremennoe sostojanie i problemy, ed. by N.Z. Gadžieva, V.K. Žuravlev & V.P. Neroznak. Moskva: Nauka, 206–234, 337–344.

Gale, James S. 1897. *A Korean-English Dictionary*. Yokohama – Shanghai – Hongkong – Singapore: Kelly & Walsh.

Gale, James S. et alii. 1916. *Korean Grammatical Forms*. Seoul: Korean religious Tract Society.

Gamkrelidze, T. & Ivanov, V. V. 1984. *Indoevropejskij jazyk i indoevropejcy. Rekonstrukcija i istoriko-tipologičeskij analiz prajazyka i protokuľtury.* Tbilisi: Izdateľstvo Tbilisskogo universiteta.

Ganhuyag, Č. 2002. *Mongolian-English dictionary*. Ulaanbaatar: Project Monendic.

Ganiev, Sultan-Medžid. 1897. *Russko-tatarskij slovaŕ*. Baku: Tipografija Pervogo tipografičeskogo t-va.

Garipov, T.M. 2007. *Istoriko-ėtimologičeskij slovaŕ baškirskogo jazyka*, Vyp. I: *Korneslova s glasnymi inicialijami*. Ufa: Vagant.

Garipov, T.M. & Nafikov, Šamil V. 2009. *Istoriko-ėtimologičeskij slovaŕ baškirskogo jazyka*, Vyp. II. Ufa: Vagant.

Garkavec, Aleksandr. 2006. *Codex Cumanicus. Poloveckie molitvy, gimny i zagadki XIII i XIV vekov*. Moskva: russkaja derevnja. <http://history.org.ua/LiberUA/5–9900422–2–3/5–9900422–2–3.pdf>

Garkavec, Aleksandr N. 2011. *Kypčakskij slovaŕ. Po armjanopiśmennym pamjatnikam XVI-XVII vekov*. Almaty: Almatykitap baspasy.

Geng, Shimin. 2006. *Gudai weiwu'er wenxian jiaocheng*. Beijing: Minzu chubanshe.

Geng, Shimin. 2007. *Weiwu'er yu hasakeyu wenxue lunji* (Collection of the Papers on Uighur and Kazakh Philology). Beijing: Zhongyang minzu daxue chubanshe.

Georg, Stefan. 1999–2000. Haupt und Glieder der Altaischen Hypothese: die Körperteilbezeichnungen im Türkischen, Mongolischen und Tungusischen. *Ural-Altaische Jahrbücher*, N.F. 16, 143–182.

Georg, Stefan. 2003a. Mongghul. In: Janhunen, Juha (ed.). *The Mongolic Languages*. London: Routledge, 286–306.

Georg, Stefan. 2003b. Ordos. In: Janhunen, Juha (ed.). *The Mongolic Languages*. London: Routledge, 193–209.

Georg, Stefan. 2003c. Japanese, the Altaic Theory, and the Limits of Language Classification. In: Osada, Tosiki & Alexander Vovin (eds.). *Perspectives on the Origins of the Japanese Language*. Kyoto: International Research Center for Japanese Studies, 429–449.

Georg, Stefan. 2004a. Unreclassifying Tungusic. In: *Proceedings of the First International Conference on Manchu-Tungus Studies* (Bonn, August 28 – September 1, 2000), Volume 2: *Trends in Tungusic and Siberian Linguistics*, ed. by Carsten Naeher. Wiesbaden: Harrassowitz, 45–57.

Georg, Stefan. 2004b. [Review of *Etymological Dictionary of the Altaic Languages* (2003)]. *Diachronica* 21/2, 445–450.

Georg, Stefan. 2005. Reply [to Starostin response, 2005]. *Diachronica* 22/2, 455–457.

Georg, Stefan. 2008. Review article of Robbeets, Martine Irma: *Is Japanese related to Korean, Tungusic, Mongolic and Turkic?* (Wiesbaden: Harrassowitz 2005). *Bochumer Jahrbücher für Ostasienforschung* 32, 247–278.

Georg, Stefan, Michalove, Peter A., Manaster Ramer, Alexis & Sidwell, Paul J. 1999. Telling General Linguists about Altaic. *Journal of Linguistics*, 35/1, 1998, 65–98.

Georgieuiits, Bar(p)tholomaeo. 1558a. *Pro fide Christiana cum Turca disputationis habitae et mysterio sanctae Trinitatis in Alchorano invento, nunc primum in Latinum sermonem uerso, brevis descriptio*. Cracoviae: Officina Ungleriana.

Georgieuiz, Bartholomaeo. 1558b. *De Turcarum moribus epitome*. Lugduni (Lyons): Tornaesius (Jean de Tournais).

Gercenberg, Leonard G. 1971. Altaistika s točki zrenija indoevropeista. In: *Problema obščnosti altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 31–46.

Giganov, Josif. 1801. *Slova korennyia nužnejšija k svedeniju dlja obučenija tatarskomu jazyku*. Sanktpeterburg: Imperatorskaja Akademija Nauk.

Giganov, Josif. 1801. *Grammatika tatarskago jazyka sočinennaja v Tobol'skoh glavnoj škole*. Sanktpeterburg: Imperatorskaja Akademija Nauk.

Giganov, Josif. 1804. *Slovaŕ rossijsko-tatarskij / sobrannyj v Tobol'skoj glavnom narodnom učiliščе, učitelem tatarskago jazyka*. Sanktpeterburg: Imperatorskaja Akademija Nauk.

Girfanova, A. H. 2002. *Udeghe*. München: Lincom Europa.

Gjerdman, Olof. 1926. Word-parallels between Ainu and other languages. *Le Monde Oriental* 20, 29–84.

Godziński, Stanisław 1985. *Język Średniomongolski*. Warszawa: Wydawnictwa Uniwersytetu Warszawskiego.

Golden, Peter B. 1992. Codex Cumanicus. In: *Central Asian Monuments*, edited by H. B. Paksoy. Istanbul: Isis Press. Cf. <http://vlib.iue.it/carrie/texts/carrie_books/paksoy-2/cam2.html>

Golden, Peter B. (ed.). 2000. *The King's Dictionary: The Rasūlid Hexaglot – Fourteenth Century Vocabularies in Arabic, Persian, Turkic, Greek, Armenian and Mongol*, tr. T. Halasi–Kun, P. B. Golden, L. Ligeti, and E. Schütz, *Handbuch der Orientalistik* VIII/4. Leiden: Brill.

Golden, Peter B. 2006. Turks and Iranians: An historical Sketch. In: *Turkic-Iranian Contact Areas. Historical and Linguistic Aspects*, edited by Lars Johanson and Christiane Bulut. Wiesbaden: Harrassowitz, 17–38.

Golden, Peter B. 2008–09/2011. Ethnogenesis in the tribal zone: The Shaping of the Turks. *Archivum Eurasiae Medii Aevi* 16, 73–112. Re-edition in: *Studies on the Peoples and Cultures of the Eurasian Steppes*, ed. by Cătălin Hriban. Bucureşti: Editura Academiei Româna – Brăila: Muzeul Brăilei Editura Istros, 17–63.

Golden, Peter B. 2016. Turks and Iranians: Aspects of Türk and Khazaro-Iranian Interaction. In: *Turks and Iranians. Interactions in Language and History: The Gunnar Jarring Memorial Program at the Swedish Collegium for Advanced Study*, edited by Éva Á. Csató, Lars Johanson, András Róna-Tas, Bo Utas. Wiesbaden: Harrassowitz (Turcologica 105), 79–106.

Golstunskij, Konstantin F. 1860. *Russko-kalmyckij slovaŕ*. St. Petersburg: Tipografija Akademii Nauk.

Golstunskij, Konstantin F. 1893–1895. *Mongoľsko-russkij slovaŕ*. St. Petersburg: Ikonnikov.

Gombocz, Zoltán. 1905. Az altaji nyelvek hangtörténetéhez. *Nylevtudományi Közlemények* 35, 241–282.

Gombocz, Zoltán. 1912. *Die bulgarisch-türkische Lehnwörter in der ungarischen Sprache*. Helsinki: MSFOu 30.

Gombocz, Zoltán. 1913. Zur Lautgeschichte der altaischen Sprachen. *Keleti Szemle* 13, 1–37.

Gombocz, Zoltán & Melich, János. 1914–1944. *Magyar etymologiai szótár*. I. köt. I–X. füzet [*A–érdëm*], II. köt. XI–XVII. füzet [*erdő–geburnus*]. Budapest: Magyar *Tudományos Akadémia*.

Gordlevskij, V.A. 1945. Čislitel'noe 50 v tureckom jazyke (K voprosu o sčete v tjurkskix jazykax). *Izvestija Akademii nauk SSSR* 4/3–4, 135–147.

Gordon, Colin D. 1961. *The age of Attila: fifth-century Byzantium and the Barbarians*. Ann Arbor: The University of Michigan Press.

Gorelova, Liliya M. 2002. *Manchu Grammar*. Leiden: Brill.

Greenberg, Joseph H. 1997. Does Altaic exist? In: *Indo-European, Nostratic and Beyond: A Festschrift for Vitaly V. Shevoroshkin*, ed. by Irén Hegedus, Peter A. Michalove, and Alexis Manaster Ramer. Washington, DC: Institute for the Study of Man, 88–93. Appearing also in Joseph H. Greenberg: *Genetic Linguistics: Essays on Theory and Method*, edited with an introduction and bibliography by William Croft. Oxford: University Press 2005, 325–330.

Grekul, A.I. 1975. Mestoimenija. In: *Grammatika xakasskogo jazyka*, ed. N.A. Baskakov. Moskva: Nauka, s. 145–163.

Grenoble, L. A., F. Li, and L. J. Whaley. 1999. Revisiting Tungusic classification from the bottom up: a comparison of Evenki and Oroqen. *Language* 75, 286–321. https://doi.org/10.2307/417262

Griffen, Toby D. 1994. Altaic, Germano-European, and Nostratic: The Evidence of Phonetics and Phonological Systems. *Mother Tongue*, May 1994, 38–49.

Grønbach, Vilhelm. 1902. *Forstudier til Tyrkisk lydhistorie*. København: Lehmann og Stages.

Grønbech, K. 1942. *Komanisches Wörterbuch*. Kopenhagen: Monumenta Linguarum Asiae Maioris.

Grube, Wilhelm. 1896. *Die Sprache und Schrift der Jučen*. Leipzig: Otto Harrassowitz. <https://archive.org/details/diespracheundsc00unkngoog>

Grunina, E.A. 1997. Oguzskij jazyk X-XI vv. In: Ė. R. Tenišev (ed.), *Tjurkskie jazyki*, Moscow: Indrik, 81–89.

Gruntov, Ilja A. 2002. *Rekonstrukcija padežnoj sistemy praaltajskogo jazyka. Padežnye sistemy altajskix jazykov: Opyt diaxroničeskoj interpretacii*. Moskva: Rossijskij gosudarstvennyj gumanitarnyj universitet, Ph.D. diss.

Gruntov, Ilja A. 2005. Razvitie pramongoľskogo gortannogo spiranta **h*- v načaľnoj pozicii v jazyke pamjatnika mongoľskogo jazyka XV veka slovarja 'Mukaddimat al-adab'. In: *Aspekty komparativistiki*, vypusk 1 – *Orientalia et Classica: Trudy Instituta vostočnyx kuľtur i antičnosti*, vypusk VI (Moskva), 39–48.

Gruntov, Ilja A. 2007. Obščee nasledie i zaimstvovanija. Drevnejšie tjurko-mongoľskie zaimstvovanija: objazateľny li radikaľnye rešenija? In: *Problemy istoričeskogo razvitija mongoľskix jazykov. Materialy meždunarodnoj konferencii* (Sankt-Peterburg, 24–26 oktjabrja 2007). Sankt-Peterburg: Nestor-Istorija, 44–51.

Gruntov, Ilja A. & Mazo, Oľga M. 2015. Klassifikacija mongoľskix jazykov po leksikostatističeskim dannym. *Journal of Language Relationship* 13/3, 205–255.

Grunzel, Joseph. 1890. Zur Phonetik der altaischen Sprachen. *Internationale Zeitschrift für allgemeinde Sprachwissenschaft* 5, 47–83. <https://ia800902.us.archive.org/31/items/internationaleze05techuoft/internationaleze05techuoft.pdf>

Grunzel, Joseph. 1895. *Entwurf einer vergleichenden Grammatik der altaischen Sprachen nebst einem vergleichenden Wörterbuch.* Leipzig: Wilhelm Friedrich.

Gruzdeva, Ekaterina. 1998. *Nivkh.* München: Lincom Europa (Languages of the world/Materials 111).

GSR = Grammata Serica Recensa by Bernhard Karlgren. Stockholm: Museum of Far Eastern Antiquities, no. 29, Stockholm 1957. See also <http://en.wikibooks.org/wiki/Character_List_for_Karlgren's_GSR>

Haenisch, Erich. 1961. *Mandschu-Grammatik*. Leipzig: Verlag Enzyklopädie.

Haguenauer, Charles. 1950. Note à propos de japonais *ha*, lame, tranchant. *Archiv orientální* 18/1, 239–281.

Haguenauer, Charles. 1956. *Origines de la civilisation japonaise: Introduction à l'étude de la Préhistoire du Japon*. Paris, Imprimerie Nationale -Klincksieck.

Haguenauer, Charles. 1976. *Nouvelles recherches comparées sur le japonais et les langues altaïques*. Paris: L'Asiathèque (Bibliothèque de l'Institut des hautes études japonaises).

Hahn, Reinhard F. 1998a. Uyghur. In: *The Turkic Languages*, ed. by Lars Johanson & Éva Ágnes Csató. London & New York: Routledge, 379–396.

Hahn, Reinhard F. 1998b. Yellow Uyghur and Salar. In: *The Turkic Languages*, ed. by Lars Johanson & Éva Ágnes Csató. London & New York: Routledge, 397–402.

Hajnal, László. 1994. Witsen's "Dagur" Material. *Acta Orientalia Academiae Scientiarum Hungaricae*, 47/3, 279–326.

Halasi-Kun, Tibor. 1942. *La langue des kiptchaks d'aprés un manuscrit arabe d'Istanboul*. Budapest: Société Kőrösi Csoma.

Hambis, Louis. 1945. *Grammaire de la langue mongole écrite*. Paris: Adrien-Maisonneuve.

Hamilton, Alastair & Richard, Francis. 2004. *André Du Ryer and oriental studies in seventeenth century France*. London: Arcadian Library – Oxford: Oxford University Press.

Hamp, Eric P. 1969. On Proto-Ainu Numerals. *Chicago Linguistic Society Meeting* 5, 337–342.

Hamp, Eric P. 1970. On the Altaic Numerals. In: R. Jacobson and Sh. Kawamoto (eds), *Studies in General and Oriental Linguistics* (= *Fs. Shiro Hattori*). Tokyo: TEC Company, 1188–1197.

Hamp, Eric P. 1974a. The Altaic Non-Obstruents. *Bulletin of the School of Oriental and African Studies* 37, 672–674. https://doi.org/10.1017/S0041977X00127570

Hamp, Eric P. 1974b. Turkic 5, 6, 7, 60, and 70. *Bulletin of the School of Oriental and African Studies* 37, 675–677. https://doi.org/10.1017/S0041977X00127582

Han, Jianye & Ma, Chengjun. 2010. *Saweihan cidian* [Salar dictionary]. Beijing: Minzu chubanshe.

Han, Youfeng & Meng, Shuchian. 1993. *Elunchunyu hanyu duizhao duben*. [Oroqen-Chinese contrastive reader]. Beijing: Zhongyang Minzuxueyuan Chubanshe.

Handjéri, Alexandre. 1841. *Dictionnaire Français-Arabe-Persan et Turc. Enrichi D'exemples en Langue Turque Avec des Variantes, et de Beaucoup de Mots d'Arts et de Sciences*, Vol. 1–3. Moskva: Imprimerie de l'université impériale.

Hartmann, Martin. 1900. Zur türkischen Dialektkunde. *Keleti Szemle* 1, 154 –156.
Hattori, Shirō. 1948. The realtionship of Japanese to the Ryukyu, Korean, and Altaic languages. *Transactions of the Asiatic Society of Japan*, 3rd Series 1, 1948, 101–133.
Hattori, Shirô. 1959. *Nihongo no keitō* {*Genealogy of the Japanese Language*}. Tokyo: Iwanami.
Hattori, Shirô. 1959[1993]. A Glottochronological Study of the Mongol Languages, reprinted in *Selected Papers of Shirô Hattori*, vol. 4: *Studies in Altaic Languages.* Tokyo: Sanseido, 87–88.
Hauer, Erich. 1952–1955. *Handwörterbuch der Mandschusprache* / *Mande cidian*, Bd. I-II, III. Tokyo – Hamburg – Wiesbaden: Harrassowitz.
He, Rongwei. 2009. *Manyu 365ju. Yitian yiju xue manyu*. Shenyang: Liaoning minzu chubanshe.
Helimski, Eugene. 1987. Two Mator-Taigi-Karagas vocabularies from the 18th century. *Journal de la Société Finno-Ougrienne* 81, 49–132.
Helimski, Eugene & Janhunen, Juha. 1990. Once more on the ethnonym 'Tungus'. *Specimina Sibirica* 3,1990, 67–72.
Hepburn, James C. 1867. *A Japanese and English dictionary; with and English and Japanese*. Shang-hai: American Presbyterian mission press. Reeditions 1887, 1983.
Hepburn, James C. 1872. *Japanese-English Dictionary and English-Japanese dictionary*. Shang-hai: American Presbyterian mission press. Reeditions 1873, 1886, 1887, 1888, 1897, 1907.
Hervás y Panduro, Lorenzo. 1801. *Catálogo de las lenguas de las naciones conocidas, y numeracion, division, y clases de estas segun la diversidad de sus idiomas y dialectos*, Volúmen II. Madrid: Administración del real arbitrio de beneficencia.
Hindoglu, Artin. 1829. Theoretisch-pracktische türkishe Sprachlehre für Deutsche. Wien: Beck.
Hindoglu, Artin. 1831. Dictionnaire abrégé français-turc. Vienne: Beck.
Hindoglu, Artin. 1834. *Grammaire théorique et pratique de la langue turke telle qu'elle est parlée à Constantinople*. Paris: Libraire orientale de P. Dondey-Dupré.
Hindoglu, Artin. 1838. Dictionnaire abrégé turc-français. Vienne: Beck.
Hoffmann, Johann J. 1868. *Japansche Spraakleer*. Leiden: Brill
Hoffmann, Johann J. 1876a. *A Japanese Grammar*. Leiden: Brill.
Hoffmann, Johann J. 1876b. *Japanische Sprachlehre*. Leiden: Brill.
Holdermann, Jean-Baptiste. 1730. *Grammaire turque ou Méthode courte & facile pour apprendre la langue turqve*. Constantinople.
Hölzl, Andreas. 2018a. Udi, Udihe, and the language(s) of the Kyakala. *International Journal of Diachronic Linguistics and Linguistic Reconstruction* 15, 111–146.
Hölzl, Andreas. 2018b. *The Tungusic language family through the ages: Interdisciplinary perspectives: Introduction*. Presented at International Workshop at the 51st Annual Meeting of the Societas Linguistica Europaea (SLE). 29 August – 1st September 2018, Tallinn University, Estonia.
Hong, Wontack. 1994. *Paekche of Korea and the Origin of Yamato Japan*. Seoul: Kudara International. <https://web.archive.org/web/20070205053536/http://gias.snu.ac.kr/wthong/publication/paekche/eng/paekch_e.html>
Horn, Paul. 1893. *Grundriss der neupersischen Etymologie*. Strassburg: Trübner.
Horrowitz, Franklin E. 1992. On the Proto-Indo-European etymon for "hand". *Word* 43, 411–419.

Hu, Zengyi. 1986. *Elunchunyu jianzhi* [A brief description of the Oreqen language]. Beijing: Minzu Chubanshe.

Hu, Zengyi. 2001. *Elunchunyu yanjiu*. Beijing: Minzu chubanshe.

Huang, Pei. 1990. New Light on the origins of the Manchu. *Harvard Journal of Asiatic Studies* 50/1, 239–282. https://doi.org/10.2307/2719229

Humboldt, Wilhelm von. 1836–1839. *Über die Kawi-Sprache auf der Insel Jawa*, Bd. 1–3. Berlin: Abhandlungen der Königlichen akademie der wissenschaften zu Berlin.

Ikegami, Jiro. 1974/2001. Versuch einer Klassifikation der tungusischen Sprachen. In: *Sprache, Geschichte und Kultur der Altaischen Völker*, ed. G. Hazai, P. Zieme. Berlin: Akademie Verlag, 271–272. Republished in *Tsunguuso go kenkyu (Research on the Tungus languages)*, ed. by Jiro Ikegami. Tokyo: Kyuuko Shoin 2001, 395–396.

Ikegami, Jiro. 1980. *An Uilta Basic Vocabulary*. Sapporo: Research Reports of the Language and Culture of Uiltas (Oroks).

Iliškin, Ivan K. (ed.). 1964. *Russko-kalmyckij slovaŕ*. Moskva: Sovetskaja ėnciklopedija.

Illič-Svityč, Vladislav M. 1963. Altajskie dental'nye **t*, **d*, **δ*. *Voprosy jazykoznanija* 1963/6, 37–56.

Illič-Svityč, Vladislav M. 1965. Altajskije guttural'nyje **k'*, **k*, **g*. *Ėtimologija* 1964, 338–343.

Illič-Svityč, Vladislav M. 1967. Materialy k sravniteľnomu slovarju nostratičeskix jazykov. *Ėtimologija* 1965, 321–373.

Illič-Svityč, Vladislav M. 1968. Sootvetstvija smyčnyx v nostratičeskix jazykax. *Ėtimologija* 1966, 304–355, 401–404, esp. 305–306,

Illič-Svityč, Vladislav M. 1971. *Opyt sravnenija nostratičeskix jazykov (semitoxamitskij, kartveľskij, indoevropejskij, uraľskij, dravidijskij, altajskij). Vvedenie. Sravniteľnyj slovaŕ*, I (*b-Ķ*), red. Vladimir A. Dybo. Moskva: Nauka.

Illič-Svityč, Vladislav M. 1976. *Opyt sravnenija nostratičeskix jazykov*, II (*l-ž*). Moskva: Nauka.

Il'minskij (Ilminsky), N. 1857. *Baber-nameh djagataice ad fidem codicis Petropolitani*. Cazani.

Il'minskij (Ilminsky), N. 1859. Zur tatarische Lautlehre. Aus einem Briefe des Prof. Ilminsky an A. Schiefner. *Mélanges Asiatiques* 1859, tom XV, No 3.

Il'minskij, Nikolaj I. 1860–1861. Materialy dlja izučenija kirgizskogo narěčija. *Učennye zapiski Kazanskogo universiteta* 1860, kniga 3, 107–159; kniga 4, 53–165; 1861, kn. 1, 130–162.

Il'minskij, Nikolaj I. 1861. Vstupiteľnoe čtenie v kurs turecko-tatarskogo jazyka. *Učennye zapiski Kazanskogo universiteta* 1861, kniga 3, 1–59.

Il'minskij (Ilminsky), N.I. 1863a. Ueber die Sprache der Turkmenen. *Mélanges Asiatiques*, IV (1860–63), 63–74.

Il'minskij, Nikolaj I. 1863b. Materialy dlja džagatajskogo sprjaženija. *Učennye zapiski Kazanskogo universiteta* 1863, kniga 1 & 2, 382–401.

Iľminskij, N.I. 1865. O fonetičeskix otnošenijax meždu čuvašskim i tjurk. jazykami (Piśmo k V.V. Grigorjevu). *Izvestija Arxeologičeskogo obščestva*, tom 5, vypusk 2, col. 80–84.

Il'minskij, Nikolaj I. et alii. 1869. *Grammatika altajskago jazyka*. Kazań.

Isxakov, Fazyl G. – Paľmax, Aleksandr A. 1961. *Grammatika tuvinskogo jazyka*. Moskva: Izdateľstvo vostočnoj literatury.

Išaev, Š. 1880. *Kratkij russko-sartovskij i sartovo-russkij slovaŕ*. Taškent.

Itabashi, Yoshizo. 1988. A comparative study of the Old Japanese accusative case suffix *wo* with the Altaic accusative cases. *Central Asiatic Journal* 32/3–4, 193–231.

Itabashi, Yoshizo. 1989. The origin of the Old Japanese prosecutive case suffix *yuri. Central Asiatic Journal* 33/1–2, 47–66.

Itabashi, Yoshizo. 1991. The origin of the Old Japanese genitive case suffixes ***n/nö/na/Ngo* and the Old Korean genitive case suffix ***i* in comparison with Manchu-Tungus, Mongolian and Old Turkic. *Central Asiatic Journal* 35/3–4, 231–278.

Itabashi, Yoshizo. 1993. A comparative study of the Old Japanese and Korean nominative case suffixes *i* with the Altaic third person singular pronouns. *Central Asiatic Journal* 37/1–2, 82–119.

Itabashi, Yoshizo. 2003. A Study of the Historical Relationship of the Koguryo Language, the Old Japanese Language, and the Middle Korean Language on the Basis of Fragmentary Glosses Preserved as Place Names in the Samguk Sagi. In: *Perspectives on the Origins of the Japanese Language*, ed. by Osada Tosiki & Alexander Vovin. Kyoto: International Research Center for Japanese Studies, 131–185.

Itkonen, Erkki E. 1946. Zur Frage nach der Entwicklung des Vokalismus der ersten Silbe in den finnisch-ugrischen Sprachen. *Finnisch-ugrische Forschungen* 29, 222–337.

Itkonen, Erkki E. 1954. Zur Geschichte des Vokalismus der ersten Silbe im Tscheremischen und in den permischen Sprachen. *Finnisch-ugrische Forschungen* 31, 149–345.

Itkonen, Erkki E. 1962. Die Laut– und Formenstruktur der finnisch-ugrischen Grundsprache. *Ural-altaische Jahrbücher* 34, 187–210.

Ivanov, Spiridon A. 2004. *Dialektologičeskij slovaŕ jakutskogo jazyka: svodnye* karty, časť 1: *Fonetika*. Jakutsk: Izdateľstvo JF SO RAN.

Ivanov, Spiridon A. 2010. *Dialektologičeskij slovaŕ jakutskogo jazyka: svodnye* karty, časť 2: *Morfologija i leksika*. Novosibirsk: Nauka.

Ivanov, Vjačeslav V. 1977. K tipologii čisliteľnyx pervogo desjatka v jazykax Evrazii. In: *Problemy lingvističeskoj tipologii i struktury jazyka*. Leningrad: Nauka, 36–41.

Ivanovskij, Aleksej O. 1894/1982. *Mandjurica. Obrazcy solonskogo i daxurskogo jazykov*. Sankt-Petersburg: Imperatorskaja Akademija nauk / reed. Budapest: Akadémiai Kiadó (Materials for Central Asiatic and Altaic studies, 2).

Izidinova, S.R. 1997. Krymskotatarskij jazyk. In: *TJ*, 298–308.

Jang, Taeho. 2008. *Xiboyu yufa yanjiu*. Kunming: Yunnan minzu chubanshe.

Janhunen, Juha. 1977. *Samojedischer Wortschatz. Gemeinsamojedische Etymologien*. Helsinki: Castrenianumin toimitteleita 17.

Janhunen, Juha. 1981. Uralilaisen kantakielen sanastosta [Summary: Über den Wortschatz des Protouralischen]. *Journal de la Société Finno-ougrienne* 77:9, 219–274.

Janhunen, Juha. 1982. On the structure of Proto-Uralic. *Finnisch-Ugrische Forschungen* 44, 23–42.

Janhunen, Juha. 1985. The Tungus peoples and the conquest of Siberia. In: *Altaistic studies. Kungl. Vitterhets Historie och Antikvitets Akademien*, *Konferenser* 12 (Stockholm), 73–77.

Janhunen, Juha. 1990. *Material on Manchurian Khamnigan Mongol*. Helsinki. Castrenianumin toimitteita 37.

Janhunen, Juha. 1991. *Material on Manchurian Khamnigan Evenki*. Helsinki: Castrenianumin toimitteita 40.

Janhunen, Juha. 1992a. On the Position of Khamnigan Mongol. In: *Journal de la Société Finno-Ougrienne* 84, 115–143.

Janhunen, Juha. 1992b. Das Japanische in vergleichender Sicht. *Journal de la Société Finno-Ougrienne* 84, 145–161.

Janhunen, Juha. 1993. The teens in Jurchen and Manchu revisited. *Memoires de la Société Finno-Ougrienne* 215, 169–183.

Janhunen, Juha. 1994. Additional notes on Japanese and Altaic (1–2). *Journal de la Société Finno-Ougrienne* 85, 236–240, 256–260.

Janhunen, Juha. 1996a. Prolegomena to a Comparative Studies of Mongolic and Tungusic. *Proceedings of the 38th Permanent International Altaistic Conference (PIAC).* Kawasaki, Japan: August 7–12, 1995. Ed. G. Stary. Wiesbaden: Harrassowitz Verlag, 209–218.

Janhunen, J. 1996b. *Manchuria. An Ethnic History*. Helsinki: Mémoires de la Société Finno-Ougrienne, Vol. 222.

Janhunen, Juha. 2003a. Khamnigan Mongol. In: Janhunen, Juha (ed.). *The Mongolic Languages*. London: Routledge, 83–101.

Janhunen, Juha. 2003b. Mongol Dialects. In: Janhunen, Juha (ed.). *The Mongolic Languages*. London: Routledge, 177–192.

Janhunen, Juha (ed.). 2003c. *The Mongolic Languages*. London-New York: Routledge.

Janhunen, Juha. 2005. Tungusic – endangered language family in Northeast Asia. *International Journal of the Sociology of Language* 173, 37–54. <http://www.newsmth.net/bbsanc.php?path=/groups/literal.faq/Linguistics/Material/englishliterature/M.1159190330.A0&ap=631>

Janhunen, Juha. 2012a. *Mongolian*. Amsterdam: John Benjamins.

Janhunen, Juha. 2012b. Khitan: Understanding the Language Behind the Script, *SCRIPTA* 4, 1–36.

Janhunen, Juha. 2012c. The expansion of Tungusic as an ethnic and linguistic process. In: *Recent Advances in Tungusic Linguistics*, ed. by A. L. Malchukov, L. J. Whaley. Wiesbaden: Harrassowitz, 5–16.

Janhunen, Juha. 2013. Personal pronouns in Core Altaic. In: *Shared grammaticalization. With special focus on the Transeurasian languages*. Amsterdam: Benjamins (Studies in Language Companion Series 132), 211–226.

Janhunen, Juha 2014. Ural-Altaic. The polygenetic origins of nominal morphology in the Transeurasian zone. In: *Paradigm change in the Transeurasian languages and beyond*, ed. by Robbeets, Martine & Bisang, Walter. Amsterdam: Benjamins (Studies in Language Companion Series 161), 311–335.

Janhunen, Juha. 2018. From Tatar to Magyar: Notes on Central Eurasian Ethnonyms in *-r*. In: *Philology of the Grasslands. Essays in Mongolic, Turkic, and Tungusic Studies*, ed. by Ákos Bertalan Apatóczky & Christopher P. Atwood. Leiden – Boston: Brill (Languages of Asia, Volume 17), 138–146.

Janhunen, Juha & Hou, Yucheng & Xu, Jingxue. 1989. The Orochen of Xinsheng. *Journal de la Société Finno-Ougrienne* 82, 145–169.

Janhunen, Juha & Kho Songmoo. 1982. Is Korean related to Tungusic? *Hangeul* 177, 179–190.
Jankowski, Henryk. 1987. *Détermination participiale dans les langues ouraliennes et altaïques choisies*. Poznań: Wydawnictwo Naukowe UAM.
Jankowski, Henryk. 2013. Altaic Languages and Historical Contact. In: *Current Trends in Altaic Linguistics: A Festschrift for Professor Emeritus Seong Baeg-in on his 80th Birthday*, ed. by Kim Juwon & Ko Dongho. Seoul: Altaic Society of Korea, 523–545.
Jarosz, Aleksandra. 2015. *Nikolay Nevskiy's Miyakoan Dictionary: Reconstruction from the Manuscript and its Ethnolinguistic Analysis. Studies on the manuscript*. Poznań: PhD. Thesis.
Jaxontov, Sergej E. 1971. Leksika kak priznak rodstva jazykov. In: *Problema obščnosti altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 110–120.
Jaxontova, Nataľja N. 1996. *Ojratskij literaturnyj jazyk XVII veka*. Moskva: Vostočnaja literatura.
Jazyki Azii i Afriki. V. Altajskije jazyki, eds. Solncev, V. M. i kol. Moskva: Nauka 1993.
Jazyki narodov SSSR. Mongoľskie, tunguso-mańčžurskie i paleoaziatskie jazyki, eds. Vinogradov, V. V. i kol. Leningrad: Nauka 1968.
Jie, Yuzhong. 2003. *Diming zhong de Xinjiang*. Wulumuqi: Xinjiang renmin chubanshe.
Jin, Ning & Stary, Giovanni. 1993. *Sibe-English conversations*. Wiesbaden: Harrassowitz.
Jin, Qizong. 1984. *Nüzhen wen cidian*. Beijing: Wenwu.
Jaxontova, Natalja S. 1996. *Ojratskij literaturnyj jazyk XVII veka*. Moskva: Nauka.
JN II = Baskakov, Nikolaj. A. et al., eds. 1966. *Jazyki narodov SSSR. T. II: Tjurkskie jazyki*. Leningrad: Nauka.
JN V = Sunik, Orest P. et al., eds. 1968. *Jazyki narodov SSSR. T. V: Mongoľskie, tunguso-mańčžurskie i paleoaziatskie jazyki*. Leiningrad: Nauka.
Johanson, Lars. 1998. The History of Turkic. In: *The Turkic Languages*, ed. by Lars Johanson & Éva Á. Csató. London & New York: Routledge, 81–83.
Johanson, Lars & Csató, Éva Ágnes. 1998. *The Turkic Languages*. London & New York: Routledge.
Johanson, Lars & Robbeets, Martine. (eds.). 2010. *Transeurasian Verbal Morphology in a Comparative Perspective: Genealogy, Contact, Chance*. Wiesbaden: Otto Harrassowitz.
Joki, Aulis J. 1976. Some Samoyed-Tunguz word comparisons. In: *Tractata Altaica. Denis Sinor sexagenariootime de rebus altaicis merito dedicata*. Wiesbaden: Harrassowitz, 321–323.
JSFOu = Journal de la Société Finno-Ougrienne.
Jun, Hu & Stuart, Kevin. 1994. Materials Relative to the Mongolian Language Family. *Mongolian Studies* 17, 142–146.
Junker, H. F. J. 1953. Zu den koreanischen Zahlwörtern. *Mitteilungen des Instituts für Orientforschung* 1, 298–312.
Kajdarov, A.T. 1997. Kazaxskij jazyk. In: *TJ*, 242–253.
Kalinina, E. 2008. Etjud o garmonii glasnyx v negidalskom jazyke, ili neglasnye prezumpcii o glasnych zvukax. in: Arxipov, A. V. et col. *Fonetika i nefonetika. K 70–letiju Sandro V. Kodzasova*. Moskva: Jazyki slavjanskix kul'tur, 272–282.
Kałużyński, Stanisław. 1961. *Mongolische Elemente in der jakutischen Sprache*. Warszawa: Polska akademia nauk.
Kałużyński, Stanisław. 1969+1970. Dagurisches Wörterverzeichnis. *Rocznik orientalistyczny* 33/1, 103–144 + 33/2, 109–143.

Kałużyński, Stanisław. 1972. Solonisches Wörterverzeichnis. *Rocznik orientalistyczny* 34/1, 39–77 + 34/2, 15–56.

Kałużyński, Stanisław. 1977. *Die Sprache des mandschurischen Stammes Sibe aus Gegend von Kuldscha. I. F. Muromskis sibenische Texte*, II. *Wörterverzeichnis*. Warszawa: Państwowe Wydawnictwo Naukowe (Prace orientalistyczne, 25).

Kałużyński, Stanisław. 1995. *IACUTICA. Prace jakutoznawcze*, ed. by Marek Stachowski. Warszawa: Wydawnictwo Akademickie DIALOG.

Kam Tak-sing. 2017. The Term Mongγol Revisited. *Central Asiatic Journal* 60, 183–206. https://doi.org/10.13173/centasiaj.60.1-2.0183

Kanar, Mehmet. 2010. *Etimolojik Osmanlıca Türkçesi Sözlüğü.* Istanbul: Derin Yayınları.

Kanazawa Shōzaburō. 1910. *The common origin of the Japanese and Korean languages*. Tokyo: Sanseidō.

Kane, Daniel. 1989. *The Sino-Jurchen Vocabulary of the Bureau of Interpreters*. Bloomington: Indiana University – Research Institute for Inner Asian Studies (Uralic and Altaic Series, Vol. 153).

Kane, Daniel. 2009. *The Kitan Language and Script*. Leiden – Boston: Brill.

Kara, György. 1959. Notes sur les dialectes oirat de la Mongolie Occidentale. *Acta Orientalia Academiae Scientiarum Hungaricae* 8, 111–168.

Kara, György. 1965. Le dictionnaire étymologique et la langue mongole. *Acta Orientalia Academiae Scientiarum Hungaricae* 18, 1–32.

Kara, György. 1990. Zhiyuan yiyu. Index alphabétique des mots mongols. *Acta Orientalia Academiae Scientiarum Hungaricae* 44, 279–344.

Károly, László. 2013. The case of Altaic and West Old Turkic. *Turkic languages* 17, 182–196.

Károly, László. 2014. Deverbal nominals in Altaic: in search of a framework (not only) for reconstruction. *Turkic languages* 18, 54–72.

Katarinskij, Vasilij V. 1899. *Baškirsko-russkij slovaŕ*. Orenburg.

Kazakh language <http://en.wikipedia.org/wiki/Kazakh_language>

Kazama, Shinjiro. 2002a. Negidal texts and grammar. Osaka: ELPR.

Kazama, Shinjiro. 2002b. Ulcha oral literature 2: a collection of texts. Osaka: ELPR.

Kazama, Shinjiro. 2003a. *Ewen texts and grammar*. Osaka: ELPR.

Kazama, Shinjiro. 2003b. Basic vocabulary (A) of Tungusic languages. Osaka: ELPR (Endangered Languages of the Pacific Rim Publications Series, A2–037; Publications on Tungus Languages and Cultures, 25). <http://repository.tufs.ac.jp/bitstream/10108/69777/1/A2–037.pdf>

Kazár, Lájos. 1980. *Japanese-Uralic Language Comparison*. Hamburg: Kazár-Tsurusaki Books.

Kazem-Bek, Mirza Aleksandr K. 1839. *Grammatika turecko-tatarskogo jazyka*. Kazań.

Kazem-Bek, Mirza Aleksandr K. 1846. *Obščaja grammatika turecko-tatarskogo jazyka ... obogajuščennaja mnogimi novymi filologičeskimi issledovanijami avtora*. Kazań.

Kazem-Bek, Aleksandr K. 1848. *Allgemeine Grammatik der türkisch-tatarischen Sprache*, übersetzt von Julius Theodor Zenker. Leipzig: Engelmann.

Kellgren, H. 1847. *Die Grundzüge der finnischen Sprache mit Rücksicht auf den ural-altaischen Sprachstamm*. Berlin: Schneider & Comp.

Kempf, Béla. 2008. [Review of] Starostin, Sergei – Dybo, Anna – Mudrak, Oleg (with assistance

of Ilya Gruntov and Vladimir Glumov): An Etymological Dictionary of the Altaic Languages. *Acta Orientalia Scientiarium Academiae Hungaricae* 61, 403–408.

Kenesbaev, S.K. – Karaševa, N.B. 1966. Kazaxskij jazyk. In: *JN* II, 320–339.

Kerestedjian, Bedros. 1912/1971. *Quelques matériaux pour un dictionnaire étymologique de la langue turque*. Londres. Reprint Amsterdam: Philo 1971.

Kho, Sangmo. 1975. An etymological study of similarities between Korean and the Uralic languages. In: *Congressus Tertius Internationalis Fenno-Ugristarum, I (Tallin 1970)*. Tallin: Valgus, 105–110.

Kieffer, Jean Daniel & Bianchi, Thomas-Xavier. 1835. *Dictionnaire turc-français à l'usage des agents diplomatiques et consulaires, des commerçants, des navigateurs et autres voyageurs dans le Levant*. Paris: Imprimerie royale.

Kile, A. S. 1999. *Nanajsko-russkij tematičeskij slovaŕ (duxovnaja kul'tura)*. Xabarovsk.

Kim, Stephen S. 2003. Santa. In: Janhunen, Juha (ed.). *The Mongolic Languages*. London: Routledge, 346–363.

Kim, Alexander. 2009. Archaeological Studies of the Jurchen in the USSR and Russia. *Ural-Altaische Jahrbücher*, Neue Folge, Band 23, 247–262.

Kim, Jong-il. et al. 2009. A highly annotated whole-genome sequence of a Korean individual. *Nature* 460, 2009, 1011–1015. https://doi.org/10.1038/nature08211

Kirchner, Mark. 1998a. Kazakh and Karakalpak. In: *The Turkic Languages*, ed. by Lars Johanson & Éva Ágnes Csató. London & New York: Routledge, 318–332.

Kirchner, Mark. 1998b. Kirghiz. In: *The Turkic Languages*, ed. by Lars Johanson & Éva Ágnes Csató. London & New York: Routledge, 344–356.

Kirgizsko-russkij slovaŕ. Orenburg 1897.

Kiyose, Gisaburo N. 1977. *A Study of the Jurchen Language and Script. Reconstruction and Decipherment*. Kyoto: Horitsubunka-sha.

Kiyose, Gisaburo N. 1998. Dialectal Lineage from Jurchen to Manchu. *Central Asiatic Journal* 42, 123–127.

Kiyose, Gisaburo N. 2000. Genealogical Relationship of Jurchen Dialects and Literary Manchu. *Central Asiatic Journal* 44, 177–189.

KJ = Koreo-Japonica: a re-evaluation of a common genetic origin, by Vovin, Alexander. Honolulu : University of Hawai'i Press: Center for Korean Studies, University of Hawai'i 2010.

Klaproth, Julius. 1810. Sprachproben von Lieu-Kieu. In: *Archiv für Asiatische Litteratur, Geschichte und Sprachkunde*, Erster Band, ed. Julius Klaproth. St. Petersburg: Academischer Verlag, 151–158.

Klaproth, Julius. 1812–1814. *Reise in den Kaukasus und nach Georgien* (1807–1808), I-III. Berlin – Halle.

Klaproth, Julius. 1822. *Abhandlung über die Sprache und Schrift der Uiguren*. *Nebst einem Wörterverzeichnisse und anderen uigurischen Sprachproben, aus dem Kaiserlichen Übersetzungshofe zu Peking*. Paris.

Klaproth, Julius Heinrich. 1823. *Asia Polyglotta*. Paris: Schubart; 2nd ed. Heideloff & Campe 1831. <http://archive.org/details/asiapolyglotta02klapgoog> (1st ed.), <http://archive.org/details/asiapolyglottaw00klapgoog> (2nd ed.).

Klaproth, Julius. 1823. *Asia Polyglotta. Sprachatlas*. Paris: Eberhart.

Klaproth, Julius. 1824. Description des iles Lieou-Khieou, Extraite de plusieurs ouvrages chinois et japonois. *Nouvelles annates des voyages* 21, 289–316.

Klaproth, Julius. 1828. Comparaison de la langue des Tchouvaches avec les idiomes turks. *Journal asiatique* 1828/1, 237–246.

Kljaštornyj, Sergej G. & Livšic, Vladimir A. 1972. The Sogdian inscription of Bugut revised. *Acta Orientalia Academiae Scientiarum Hungaricae* 26/1, 69–102.

Knüppel, Michael. 2000. *Schriftenverzeichnis Gerhard Doerfer*. Göttingen: Pontus.

Knüppel, Michael. 2005. Schriftenverzeichnis Gerhard Doerfer (Corrigenda und Nachträge). *Materialia Turcica* 25, 359–372.

Knüppel, Michael. 2006a. *Schriftenverzeichnis – Karl Heinrich Menges. Nebst Index in den Werken behandelter Lexeme und Morpheme*. Wien: Neue Beihefte zur *Wiener Zeitschrift für die Kunde des Morgenlandes*, 1.

Knüppel, Michael. 2006b. Ein Beitrag zur Japanisch-Koreanisch-Altaischen Hypothese. *Wiener Zeitschrift für die Kunde des Morgenlandes* 98, 353–364.

Knüppel, Michael. 2010. Schriftenverzeichnis Gerhard Doerfer (Corrigenda et Addenda II). *Zentralasiatische Studien* 39, 165–170.

Knüppel, Michael. 2014. Doerfer, Gerhard. In: *Encyclopaedia Iranica* [online]. <http://www.iranicaonline.org/articles/doerfer-gerhard>

Kőhalmi, Käthe U. 1959. Der mongolisch-kamniganische Dialekt von Dadal Sum. *Acta Orientalia Academiae Scientiarum Hungaricae* 9, 163–204.

Kolesnikova, Vera D. 1971. O nazvanijax častej tela v altajskix jazykax. In: *Problema obščnosti altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 139–151.

Kolesnikova, Vera D. 1972a. Nazvanija častej tela čeloveka v altajskix jazykax. In: *Očerki sravniteľnoj leksikologii altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 70–103.

Kolesnikova, Vera D. 1972b. K xarakteristike nazvanij častej tela čeloveka v tunguso-mańčžurskix jazykax. In: *Očerki sravniteľnoj leksikologii altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 257–336.

Kolesnikova, Vera D. 1979. O nekotoryx obščealtajskix leksemax s semantikoj ‘sila’. In: *Problema obščnosti altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 200–205.

Kondratjev, V.G. 1981. *Grammatičeskij stroj jazyka pamjatnikov drevnetjurkskoj piśmennosti* VIII-XI *vv.* Leningrad: Izdatel’stvo Leningradskogo Universiteta.

Kononov, Andrej N. 1949. Opyt analiza termina *türk*. *Sovetskaja ėtnografija* 1949/1, 40–47.

Kononov, Andrej N. 1972/1982. *Istorija izučenija tjurkskix jazykov v Rossii. Dooktjabr’skij period*$_{1/2}$. Leningrad: Nauka.

Kononov, Andrej N. et alii. 1974/1989. *Bibliografičeskij slovaŕ otečestvennyx tjurkologov. Dooktjabŕskij period*$_{1/2}$. Moskva: Nauka.

Kononov, Andrej N. 1980. *Grammatika jazyka tjurkskix runičeskix pamjatnikov* <VII – IX vv.>. Leningrad: Nauka.

Konstantinova, O. A. 1964. *Ėvenkijskij jazyk*. Moskva & Leningrad: Nauka.

Konstantinova, O.A. 1968. Ėvenkijskij jazyk. In: *Jazyki narodov SSSR. Mongol’skie, tunguzo-mańčžurskie i paleoaziatskie jazyki*, Tom 5, Vinogradov, V. V. i kol (eds). Leningrad: Nauka, 68–87.

Kormušin, I.V. 1971. K metodike sravniteľnogo izučenija altajskix jazykov. In: *Problema obščnosti altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 22–30.

Kormušin, Igoŕ V. 1982. Tunguso-mańčžurskie jazyki. In: *Sravniteľno-istoričeskoe izučenie jazykov raznyx semej: zadači i perspektivy*, ed. by N.Z. Gadžieva, V.K. Žuravlev, V.P. Neroznak, G.I. Andreeva. Moskva: Nauka, 153–167, 321–323.

Kormušin, Igoŕ V. 1984. *Sistemy vremen glagola v altajskich jazykach*. Moskva: Nauka.

Kormušin, Igoŕ V. 1997. *Tjurkskie jenisejskie ėpitafii. Teksty i issledovanija*. Moskva: Nauka.

Kormušin, Igoŕ V. 1998. *Udyxejskij slovaŕ*. Moskva: Nauka.

Kormušin, Igoŕ V. 2008. *Tjurkskie jenisejskie ėpitafii. Grammatika i tekstologija*. Moskva: Nauka.

Kortlandt, Frederik. 1993. The origin of the Japanese and Korean accent systems. *Acta Linguistica Hafniensia* 26, 57–65.

Kortlandt, Frederik. 1998a. Are Mongolian and Tungus genetically related? *Acta Orientalia Academiae Scientiarum Hungaricae* 51, 235–237.

Kortlandt, Frederik. 1998b. Are Mongolian and Tungus genetically related? *International Journal of Central Asian Studies* 3, 61–65. https://doi.org/10.1080/03740463.1993.10415453

Kortlandt, Frederik. 2010. Indo-Uralic and Altaic revisited. In: *Transeurasian verbal morphology in a comparative perspective: genealogy, contact, chance*. Wiesbaden: Harrassowitz (*Turcologica* 78), 153–164.

Kotwicz, Władysław. 1915/1929. *Opyt grammatiki kalmyckago razgovornago jazyka*. Petrograd; 2nd edition Řevnice u Prahy.

Kotwicz, Władysław. 1931. Contributions aux études altaïques. I. Notice préliminaire; II. Les noms de nombre; III. Les noms de couleurs. *Rocznik Orientalistyczny* 7 (1929–1930), 130–234.

Kotwicz, Władysław. 1936. *Les pronoms dans les langues altaïques*. Kraków: Nakładem Polskiej Akademii umiejętności. <http://www.kpbc.ukw.edu.pl/dlibra/plain-content?id=136779>

Kotwicz, Władysław. 1939. Les éléments turcs dans la langue mandchoue. *Rocznik Orientalistyczny* 14, 91–102.

Kotwicz, Władysłav. 1950. La langue mongole parlée par les ouigours jaunes près de kan-tcheou. *Rocznik Orientalistyczny* 16, 435–465.

Kotwicz, Władysław. 1953. Studia nad językami ałtajskimi. *Rocznik Orientalistyczny* 16, 1–314.

Kotwicz, Władysław {Kotvič, Vladislav}. 1962. *Issledovanija po altajskim jazykam*. Moskva: Izdateľstvo inostrannoj literatury (Russian translation of Kotwicz 1953 by A.I. Tolkačev, with remarks of N.A. Baskakov & G.D. Sanžeev).

Kowalewski, I.Ė. 1844–1849. *Dictionnaire mongol-russe-français*, I-III. Kasan: Imprimérie de l'université.

Krejnovič, E.A. 1955. Giljacko-tunguso-mańčžurskie jazykovye paralleli. *Doklady i soobščenija Instituta jazykoznanii* VIII, 135–167.

Krejnovič, E.A. 1982. *Issledovanija i materialy po jukagirskomu jazyku*. Leningrad: Nauka.

Krippes, Karl A. 1991. A Linguistic Enigma, the Altaic Numerals. *General Linguistics* 31, 141–152.

Krippes, Karl A. 1994. 'Review of Starostin 1991. *Diachronica* 11, 272–278.

Kručkin, Jurij N. 2000. *Mongoľsko-russkij slovaŕ. Mongoľsko-russkij slovaŕ*. Ulan-Bator: Admon Kompani.

Kručkin, Jurij N. 2003. *Russko-mongoľskij slovaŕ*. Ulaanbaatar: T & U Printing.

Krueger, John R. 1961. *Vollständiges schriftmongolisches Wortregister zu Ramstedts Kalmückischem Wörterbuch*. Philadelphia: The Society for the Promotion of Kalmyk Culture.

Krueger, John R. 1973. Altaic linguistic reconstruction and culture. In: *Current trends in linguistics* 11, ed. by Thomas Sebeok, 569–581.

Krueger, John R. 1975. *The Kalmyk-Mongolian Vocabulary in Stralenberg's Geography 1730*. Stockholm: Almquist & Wiksell.

Krueger, John R. 1978–1984. *Materials for an Oirat-Mongolian to English Citation Dictionary*, 1–3. Bloomington (IN): The Mongolic Society.

Krueger, John R. & Taube, Manfred. 2006. A Bibliography of Mongolian Dictionaries. In: Walravens (ed.) 2006, 9–112.

Krylov, Sergej A. & Dybo, Anna V. 2005. O predmete 'mongoľskoe jazykoznanie'. In: *Altajskie jazyki i vostočnaja filologija. Pamjati Ė.R. Teniševa*, red. K.N. Bičeldej, G.F. Blagova, A.V. Dybo, I.V. Kormušin, D.M. Nasilov, G.C. Pjurbeev. Moskva: Institut jazykoznanija RAN / Vostočnaja literatura RAN, 219–229.

Kukljašev, S. 1859. Slovaŕ k tatarskoj xrestomatii. Kazań.

Kúnos, Ignaz (bearb.). 1902. *Šejχ Sulejman Efendi's Čagataj-Osmanisches Wörterbuch, verkürzte und mit deutscher Übersetzung versehene Ausgabe*. Budapest.

Kuribayashi, Hitoshi. 1989. Comparative Basic Vocabularies for Mongolian (Chakhar), Dagur, Shera-Yögur, Monguor, Bao-an and Dung-shang. *Studies of Linguistic and Cultural Contacts* 1, 153–383. <http://hkuri.cneas.tohoku.ac.jp/articles/roncho/A15.pdf>

Kurtböke, Petek. 1994. 17th-century Italian-Turkish Dictionaries. In: *EURALEX* 1994 *Proceedings*, 536–541.
<http://www.euralex.org/elx_proceedings/Euralex1994/60_Euralex_Petek%20Kurtboke%20–%2017th-century%20Italian-Turkish%20Dictionaries.pdf.>

Kuun, Géza (ed.). 1880/1981. *Codex Cumanicus bibliothecae ad templum Divi Marci Venetiarum*. Budapestini: Editio scient. Academiae Hungaricae / Oriental reprints.

Kuz'menkov, E.A. 1993. Mongol'skaja bazisnaja leksika v "Sokrovennom skazanii". In: *Mongolica – k 750–letiju "Sokrovennogo skazanija"*. Moskva: Nauka, 328–341.

Kuz'min, K. 1900. *Ėlementarnoe posobie k izučeniju korejskogo jazyka*. Xabarovsk.

Kyrgyz language <http://en.wikipedia.org/wiki/Kyrgyz_language#Pronouns>

Kyzlasov, Igoŕ L. 1990. *Drevnetjurkskaja runičeskaja piśmennosť Evrazii*. Moskva: Nauka.

Langdon, Margaret & Munro, Pamela. 1980. Yuman numerals. In: *American Indian and Indoeuropean Studies. Papers in Honor of M.S. Beeler*, ed. by K. Klar, M. Langdon & S. Silver. Hague: Mouton (Trends in Linguistics – Studies and Monographs, 16), 121–135.

Lapin, S.A. 1895. *Karmannyj russko-uzbekskij slovaŕ*. Samarkand.

Lattimore, Owen. 1933. The Gold tribe, „Fishkin Tatars" on the lower Sungari. *Memoires of the American Anthropological Association* 40, 1–77.

Laufer, Berthold. 1917. The vigesimal and decimal systems in the Ainu numerals. *Journal of the American Oriental Society* 37, 192–208. https://doi.org/10.2307/592921

Le Coq, Albert v. 1912. Ein manichäisches Buch-Fragment aus Chotscho. Festschrift *Vilhelm* Thomsen *zur Vollendung des siebzigsten Lebensjahres*. Leipzig: Harrassowitz, 145–154.

Lee, Iksop & Ramsey, S. Robert. 2000. *The Korean Language*. Albany: State University of New York Press.

Lee, Ki-Moon. 1958. A comparative study of Manchu and Korean. *Ural-Altaische Jahrbücher* 30, 104–120.

Lee, Ki-Moon. 1963. A genetic view on Japanese. *Chōsen gakuhō* 27, 94–105.

Lee, Ki-Moon. 1977. *Geschichte der koreanischen Sprache*. Übersetzt von Bruno Lewin. Wiesbaden: Reichert.

Lee, Ki-Moon & Ramsey, S. Robert. 2011. *A History of the Korean Language*. Cambridge: University Press.

Leont'jev, V.V. & Novikova, K.A. 1989. *Toponimičeskij slovaŕ Severo-vostoka SSSR*. Magadan.

Leontovič, Sergej G. 1895/1896. *Russko-oročenskij slovaŕ.* Vladivostok: Zapiski Obščestva izučenija Amurskago kraja 5:2.

Lessing, Ferdinand (ed.). 1960. *Mongolian-English Dictionary*. Berkeley – Los Angeles: University of California Press.

Levitskaja, Lija S. 1997. Kumykskij jazyk. In: *TJ*, 319–327.

Levitskaja, Lija S. 2014. *Istoričeskaja fonetika čuvašskogo jazyka*. Čeboksary: Čuvašskij gosudarstvennyj institut gumanitarnyx nauk.

Lewicki, Marian. 1949–1959. *La langue mongole des transcriptions chinoises du XIV siècle*: [1] *Le Houa-yi yi-yu de 1389*; [2] *Vocabulaire-Index*, Wrocław: Nakładem Wrocławskiego towarzystwa naukowego (Travaux de la Société des sciences et des lettres de Wrocław, A 29).

Lewicki, Marian. 1953. Władysław Kotwicz (20.III. 1872 – 3.X. 1944). *Rocznik Orientalistyczny* 16, XI-XXIX.

Lewin, Bruno. 1966. Arai Hakuseki als Sprachgelehrter. *Oriens Extremus* 13/2, 191–241.

Lewin, Bruno. 1976. Japanese and Korean: The Problems and History of a Linguistic Comparison. *The Journal of Japanese Studies*, Vol. 2, No. 2, 389–412. https://doi.org/10.2307/132059

Lewis, M. Paul. 2009. Altaic. In: *Ethnologue*$_{16}$ <http://www.ethnologue.com/show_family.asp?subid=861–16>

Li = Li, Gertraude Roth. 2000. *Manchu. A Textbook for Reading Documents*. Honolulu/Hawaii: University of Hawai'i Press.

Li, Shulan & Zhong, Qian & Wang, Qingfeng. 1984. *Xiboyu kouyu yanjiu* [A Study of Spoken Xibo]. Beijing: Minzu chubanshe.

Li, Shulan. 1986. *Xibo jianzhi*. Beijing: Minzu chubanshe.

Li, Yonghai. 2010. *Manyu yufa*. Beijing: Zhongyang minzu daxue chubanshe.

Lie, Hiu. 1978. Solonisches Material aus dem Huin-gol. Nach R. Kamimakis Sprachmaterial umbearbeitet, annotiert un herausgegeben. *Tungusica* I, ed, by G. Doerfer and M. Weiers. Wiesbaden: Otto Harrassowitz, 126–178.

Ligeti, Louis. 1953. Az uráli és altaji nyelvek viszonyának kérdése. *MTA Nyelv- és Irodalomtudományi Osztályának Közleményei* 4, 333–364.

Ligeti, Louis. 1955. Le lexique moghol de R. Leech. *Acta Orientalia Academiae Scientiarum Hungaricae* 4, 119–157.

Ligeti, Louis. 1959. Les mots solons dans un ouvrage chinois des Ts'ing. *Acta Orientalia Academiae Scientiarum Hungaricae* 9, 231–272.

Ligeti, Louis. 1960. Les anciens éléments mongols dans le mandchou. *Acta Orientalia Academiae Scientiarum Hungaricae* 10, 231–248.
Ligeti, Louis. 1962. Un vocabulaire mongol d'Istanboul. *Acta Orientalia Academiae Scientiarum Hungaricae* 14, 3–99.
Ligeti, Louis. 1963. Uráli török jövevényszavaink kérdéséhez. *Magyar Nyelv* 59, 381–393.
Ligeti, Louis. 1965. Le lexique mongol de Kirakos de Gandzak. *Acta Orientalia Academiae Scientiarum Hungaricae* 18, 241–297.
Ligeti, Louis. 1966. Un vocabulaire sino-ouigour des Ming: le Kao-tch'ang-kouan yi-chou du Bureau des traducteurs. *Acta Orientalia Academiae Scientiarum Hungaricae*, Vol. 19, No. 2, 117–199; No. 3, 257–316.
Ligeti, Louis. 1969. Glossaire supplémentaire au vocabulaire sino-ouigour du Bureau des traducteurs. *Acta Orientalia Academiae Scientiarum Hungaricae*, Vol. 22, No. 1, 1–49.
Ligeti, Louis. 1971. Altajskaja teorija i leksikostatistika. *Voprosy jazykoznanija* 1971/3, 22–33.
Ligeti, Louis. 1973. Az altaji nyelvrokonság és a szókészlet-statisztika. *MTA Nyelv– és Irodalomtudományi Osztályának Közleményei* 28, 259–275.
Ligeti, Louis. 1975. La théorie altaïque et la lexico-statistique. In: *Researches in Altaic Languages* (Papers Read at the 14th Meeting of the Permanent International Altaistic Conference held in Szeged, August 22–28, 1971), ed. by Louis Ligeti. Budapest: Akadémiai Kiadó, 99–115.
Ligeti, Louis. 1980. A Propos du Rhotacisme et du Lambdacisme. *Central Asiatic Journal* 24, 222–250.
Ligeti, Ligeti, (ed. by György Kara). 1990. Un vocabulaire sino-mongol des Yuan le Tche-yuan yi-yu. *Acta Orientalia Academiae Scientiarum Hungaricae* 44, 259–277.
Likeyu and Qingge'ertai. 1988. *Tuzuyu he mengguyu*. Beijing: Minzuchubanshe.
Lin, Gan. 2007. *Tujue yu huihu shi* (A History of Turks and Uygurs). Huhehaote: Neimenggu minzu chubanshe.
Lin, Gan. 2007. *Xiongnu shi* (A History of Huns). Huhehaote: Neimenggu minzu chubanshe.
Liu, Baoming (gen. editor). 2009. *Zhongguo shaoshu minzu*. Beijing: Minzu chubanshe.
Loewenthal, Rudolf. 1957. *The Turkic Languages and Literatures of Central Asia: A Bibliography*. 'S-Gravenhage: Mouton.
Lopatin, Ivan A. 1957. *Material on the Orochee language, the Goldi (Nanai) language, and the Olchi (Nani) language.* Posieux-Fribourg: Anthropos-Institut.
Lopatin, Ivan A. 1958. The Tungus Languages. *Anthropos* 53 (3–4), 427–440.
LR = Lee, Ki-Moon, & Ramsey, S. Robert. 2011. *A History of the Korean Language*. Cambridge: University Press.
LSJ = Lee, SeungJae. 2012. On the Old Korean Numerals Inscribed on Wooden Tablet no. 318*. *Scripta* 4, 27–68.
Lubsangdorji, Jugderiin & Vacek, Jaroslav. 2004. *Colloquial Mongolian. An introductory intensive course*. Vol. 1–2. Prague: Triton.
Luvsandėndėv, A. (red.). 2001–2002. *Bolšoj akademičeskij mongoľsko-russkij slovaŕ v četyrex tomax*. Moskva: Academia – Institut jazykoznanija Rossijskoj Akademii nauk.
Luwsanwandan, Sh. 1959. Mongol xel ayalguunï ucir. *Studia Mongolica* 1, 1–16.
M = Malov, Sergej E. 1957. *Jazyk želtyx ujgurov: slovaŕ i grammatika*. Alma-Ata: Izdateľstvo Akademii nauk Kazaxskoj SSR.

M(a) = Martin, Samuel E. 1992. *A Reference Grammar of Korean*. Tokyo: Charles E. Tuttle Company.

MacKenzie, D.N. 1971. *A Concise Pahlavi Dictionary*. London: Oxford University Press.

Maggio, Francesco Maria. 1643 (2nd ed. 1670). *Syntagmatōn linguarum orientalium, quae in Georgiae regionibus audiuntur. Liber secundus: complectens Arabum et Turcarum orthographiam et turcicae linguae institutiones*. Roma: Typographia sacrae Congregationis de propaganda fide.

Maxmud al-Kašgari. 2005. *Divan lugat at-turk*, perevod, predislovie i komentarii Z.-A. Auėzova; indeksy E. Ėrmes. Almaty: Dajk-Press.

Maḥmūd al-Kāšγarī. 1982–1985. *Compendium of the Turkic Dialects* (*Dīwān Luγāt at-Turk*), vols. 1–3, ed. and tr. by R. Dankoff with J. Kelly. Cambridge (Mass.): Harvard University (*Sources of Oriental Languages and Literatures* 7).

Majewicz, Alfred F. & Elżbieta. 1984. Bronisław Piłsudski's Olczan-Polish glossary – with English equivalents. *Lingua Posnaniensis* 27, 71–96.

Malchukov, Andrej L. & Whaley, Lindsay J. (eds.). 2012. Recent Advances in Tungusic Linguistics. Wiesbaden: Harrassowitz.

Malov, Sergej E. 1959. *Pamjatniki drevnetjurkskoj piśmennosti Mongolii i Kirgizii*. Moskva-Leningrad: Izdateľstvo Akademii nauk SSSR.

Manaster Ramer, Alexis. 1996. On Doerfer on Abel-Rémusat on Altaic. *Ural-Altaische Jahrbücher*, Neue Folge 14, 151–163.

Manaster Ramer Alexis & Sidwell, Paul. 1997a. The Altaic debate and the question of cognate numerals. *Wiener Zeitschrift für die Kunde des Morgenlandes* 87, 153–175.

Manaster Ramer, Alexis & Sidwell, Paul. 1997b. The truth about Strahlenberg's classification of the languages of northeastern Eurasia. *Journal de la Société Finno-ougrienne* 87, 139–160.

Manaster Ramer, Alexis, Vovin, Alexander & Sidwell, Paul. 1998. On body part terms as evidence for the Altaic hypothesis. *Ural-altaische Jahrbücher* 15, 116–138.

Martin, Samuel E. 1961. *Dagur Mongolian. Grammar, Texts, and Lexicon*. Bloomington: Indiana University (Uralic & Altaic Series, Vol. 4) – The Hague: Mouton.

Martin, Samuel E. 1966. Lexical evidence relating Korean to Japanese. *Language* 42, 185–251. https://doi.org/10.2307/411687

Martin, Samuel E. 1970. Shodon: A Dialect of the Northern Ryukyus. *Journal of the American Oriental Society* 90.1, 97–139. https://doi.org/10.2307/598434

Martin, Samuel E. 1987. *The Japanese Language Through Time*. New Haven: Yale University Press.

Martin, Samuel E. 1992. *A reference grammar of Korean*. Rutland: Charles E. Tuttle Company.

Martin, Samuel E. 1996. *Consonant Lenition in Korean and the Macro-Altaic Question*. Honolulu: University of Hawa'i.

Martin, Samuel E. 2006. What do Japanese and Korean have in common: The history of certain grammaticalizations. *Korean Linguistics* 13, 219–234. https://doi.org/10.1075/kl.13.10sem

Mascis, Antonio. 1677. *Vocabolario Toscano e Turchesco.* Florence: Navesi.

Matisoff, James A. 1997. *Sino-Tibetan Numeral Systems: Prefixes, Protoforms and Problems*. Canberra: Pacific Linguistic of Series B–114.

Maue, Dieter. 2017. *The Khüis Tolgoi inscription – signs and sounds*. Paper presented at 60th PIAC (Székesfehérvár, Hungary, August 31, 2017). <https://www.academia.edu/34589694/The_Khüis_Tolgoi_inscription_-_signs_and_sounds>

Medvedev, V. E. 1977. *Kultura amurskix čžurčženej. Konec X-XI vek.* (Po materialam gruntovyx mogilnikov). Novosibirsk: Nauka.

Megiser, Hieronymus. 1612. *Institutiones linguae Turcicae, libri quatuor*. Wrocław – Leipzig: Kirsten.

Meier, Georg F. & Meier, Barbara. 1979. *Handbuch der Linguistik und Kommunikationswissenschaft. Band I. Sprache, Sprachentstehung, Sprachen*. Berlin: Akademie-Verlag, 111–121.

Menander: *The history of Menander the Guardsman*. Introductory essay, text, translation, and historiographical notes R.C. Blockley. Liverpool: Cairns 1985.

Menges, Karl H. 1943. The function and origin of the Tungus tense in *-ra* and some related questions of Tungus grammar. *Language* 19, 237–251. https://doi.org/10.2307/409828

Menges, Karl Heinrich. 1951. Altaic elements in the Proto-Bulgarian inscriptions. *BYZANTION* 21, 85–115.

Menges, Karl H. 1952. Zu einigen Problemen der tungusischen Grammatik. *Ural-Altaische Jahrbücher* 24, 112–121.

Menges, Karl Heinrich. 1961. Altajische Studien. *Der Islam* 37, 1–23. https://doi.org/10.1515/islm.1961.37.1-3.1

Menges, Karl Heinrich. 1966a. Ablaut in Altajic? *Ural-Altaische Jahrbücher* 38, 1–3.

Menges, Karl Heinrich. 1966b. Einige altajische Namen für Haustiere aus der Familie der Rinder. *Ural-Altaische Jahrbücher* 38, 143–145.

Menges, Karl H. 1968a. *Die tungusischen Sprachen*. In: *Handbuch der Orientalistik*, 5. Bd. *Altaistik*, 3. Abschnitt. Leiden – Köln: Brill, 21–256.

Menges, Karl H. 1968b. *Tungusen und Ljao.* Wiesbaden: Steiner (*Abhandlungen für die Kunde des Morgenländes* 38.1).

Menges, Karl H. 1968/1995. *The Turkic Languages and Peoples. An Introduction to Turkic Studies*$_{1/2}$.Wiesbaden: Harrassowitz.

Menges, Karl H. 1974. Review of Miller 1971. *Central Asiatic Journal* 18, 193–201.

Menges, Karl H. 1975. *Altajische Studien* II: *Japanisch und Altajisch*. Wiesbaden: Steiner (*Abhandlungen für die Kunde des Morgenlandes,* Bd. 41.3).

Menges, Karl Heinrich. 1976. Aus dem Gebiet der altajischen Suffix-Morphologie: die Verbal-Suffixa Tung. *-dyt/-dyč*, Türk. *-qar-*, *-yyr-*, *-ɣa-/-qa-*, *-rqa-*, *-qaly-/-ɣaly-*. In: *Hungaro-Turcica. Studies in honour of Julius Németh*, ed. by Gy. Káldy-Nagy. Budapest: Loránd Eötvös University – Leiden: Brill, 101–117.

Menges, Karl H. 1977. Dravidian and Altaic. *Anthropos* 72, 129–179.

Menges, Karl H. 1978a. Problems of Tungus Linguistics. *Anthropos* 73, 367–400.

Menges, Karl H. 1978b. Jakutisch und Tungusisch. *Central Asiatic Journal* 22, 244–262.

Menges, Karl Heinrich. 1982a. Etymologika. *Central Asiatic Journal* 26, 105–118.

Menges, Karl Heinrich. 1982b. Problemata etymologica: Altajisch **qyr–* und seine Verflechtungen. *Acta Orientalia Academiae Scientiarum Hungaricae* 36, 375–390.

Menges, Karl Heinrich. 1983a. Etymologika zu den altajischen Bezeichnungen von Metallen, Haustieren und Gewächsen. *Ural-Altaische Jahrbücher* N.F. 3, 102–165.

Menges, Karl Heinrich. 1983b. Etymologica. In: *Byzantino-Altaica. Fs. für H.-W. Haussig*, ed. H. Váry. Bochum (= *Materialia Turcica* 7–8 [1981–82]), 264–294.

Menges, Karl H. 1984. Korean and Altaic – a preliminary sketch. *Central Asiatic Journal* 28, 234–295.

Menges, Karl Heinrich. 1986. Das eurasische **kuč-*, **kut-* etc. 'Hund, Junges vom Hund'. *Central Asiatic Journal* 30, 266–272.

Menges, Karl Heinrich. 1987. Three Altaic etymologies. In: *Coreanica et Altaica. Fs. for Prof. Pak Eunjong.* Hayang 7, 1–34.

Menges, Karl Heinrich. 1988. Etymologica zu den türkischen und anderen altajischen Ausdrücken für "werden, sitzen, wohnen, sein; Staub, Erde; zerkleinern, zerreibe, Mehl; in kleinen Teilchen". In: *Turcica et Orientalia: Studies in honour of G. Jarring.* Istanbul – Stockholm: Swedish Research Institute in Istanbul, 101–120.

Menges, Karl Heinrich. 1991. Der Instrumentalis und einige seiner Funktionen (im Türkischen, anderen altajischen und verwandten Sprachgebieten). *Turcica* 21–23, 321–342. https://doi.org/10.2143/TURC.23.0.2014206

Menges, Karl Heinrich. 1995. On some names of Tungus tribes and related problems. *Wiener Zeitschrift für die Kunde des Morgenlandes* 85, 199–231.

Menges, Karl Heinrich & Naumann, Nelly (eds.). 1999. *Language and Literature – Japanese and the Other Altaic Languages: Studies in Honour of Roy Andrew Miller on His 75th Birthday*. Wiesbaden: Harrassowitz.

Měnggǔ yǔzú yǔyán cídiǎn [蒙古语族语言词典 'Dictionary of the Language(s) of the Mongolian Nationality'], ed. by Sūn Zhú (孫竹). Xining: Qinghai renmin chubanshe 1990.

Meninski, Franciscus à Mesgnien. 1680. *Thesaurus linguarum orientalium Turcicæ, Arabicæ, Persicæ, Præcipuas earum opes à Turcis peculiariter usurpatas continens nimirum Lexicon Turcico-Arabico-Persicum Nonsolùm vocum tàm simplicium quàm conjunctarum copiâ maximâ refertum, sed etiam innumeris phrasibus locupletatum, Quarum Quæ Turcis usitatæ communis usûs sunt, Latinè, Germanicè, Italicè, Gallicè, Polonicè; quæ non adeò vulgares, in libris tamen literis non infrequentes, Latinè & Italicè; quæ porrò rariùs in usum veniunt ... & Grammaticam Turcicam Cum adjectis ad singula ejus capita Præceptis Grammaticis Arabicæ & Persicæ linguæ opus* ... Viennæ Austriæ: typis, & sumptibus Francisci à Mesgnien Meninski.
<https://ia802608.us.archive.org/25/items/bub_gb_7MBIAAAAcAAJ/bub_gb_7MBIAAAAcAAJ.pdf>

Meninski, Franciscus à Mesgnien. 1687. *Complementum Thesauri lingurum orientalium seu latino-turcico-arabico-persicum,* simul idem index verborum lexici turcico-arabico-persici, quod latinâ, germanicâ, aliarumque linguarum adjectâ nomenclatione nuper in lucem editum‚ *aliarumque linguarum adjectâ nomenclatione nuper in lucem editum.* Vienna.
<http://bibliotecadigital.aecid.es/bibliodig/i18n/consulta/registro.cmd?id=141>

Meninski, Franciszek. 1756. *Institutiones linguae Turcicae, cum rudimentis parallelis linguarum Arabicae & Persicae*, ed. by Adam F. Kollár. Vienna: Schilg.

Meninski a Mesgnien, Franciszek. 1780–1802. *Lexicon Arabico-Persico-Turcicum adiecta ad*

singulas voces et phrases significatione latina, ad usitatiores etiam italica, Vol. 1–4. Vienna: Joseph Edler von Kurzböck.

Meniński, Franciscus à Mesgnien. 2000. *Thesaurus linguarum Orientalium Turcicae-Arabicae-Persicae = Lexicon Turcico-Arabico-Persicum*, 6: *Index der türkischen Wörter*, ed. by Stanisław Stachowski & Mehmet Ölmez. Istanbul: Simurg (Series: Türk dilleri araştırmaları dizisi, 32).

Meyer-Lübke, Wilhelm. 1935. *Romanisches etymologisches Wörterbuch*. Heidelberg: Winter.

MHGDA 2009 = Mapping Human Genetic Diversity in Asia. The HUGO Pan-Asian SNP Consortium. *Science* 326, 2009, 1541–1545.

Miller, Roy A. 1967a. The Japanese language. Chicago: University of Chicago Press.

Miller, Roy Andrew. 1967b. Old Japanese phonology and the Korean-Japanese relationship. *Language* 43, 278–302. https://doi.org/10.2307/411398

Miller, Roy A. 1968. The Japanese reflexes of Proto-Altaic **d-*, **ǯ-* and **č-*. *Journal of the American Oriental Society* 88, 753–765. https://doi.org/10.2307/598120

Miller, Roy A. 1969. The Altaic Numerals and Japanese. *Journal of the National Association of Teachers of Japanese* 6.2, 14–20. https://doi.org/10.2307/488820

Miller, Roy Andrew. 1970. The Old Japanese Reflexes of Proto-Altaic **l_2*. *Ural-Altaische Jahrbücher* 42, 127–147.

Miller, Roy Andrew. 1971. *Japanese and the other Altaic Languages*. Chicago & London: Chicago University Press.

Miller, Roy Andrew. 1975a. Japanese-Altaic evidence and the Proto-Turkic 'zetacism – sigmatism'. In: *Research in Altaic Languages*, ed. by Louis Ligeti. Budapest: Akadémiai Kiadó, 157–172.

Miller, Roy Andrew. 1975b. Notes on the ʒürčen Numerals for the Teens. *Ural-Altaisches Jahrbücher* 47, 145–153.

Miller, Roy A. 1977. The Altaic accusatives in the light of Old and Middle Korean. In: *Altaica. Proceedings of the 19th annual meeting of the Permanent International Altaistic Conference*. Helsinki: MSFOu 158, 157–169.

Miller, Roy A. 1979[1981]. Old Japanese and the Koguryŏ fragments: A re-survey. In: *Exploration in linguistics. Papers in honor of Kazuko Inoue*, edited by George Bedell, Eichi Kobayashi, Masatake Muraki. Tokyo: Kenkyusha, 348–368.

Miller, Roy Andrew. 1985. Altaic Connections of the Old Japanese Negatives. *Central Asiatic Journal* 29, 35–84.

Miller, Roy Andrew. 1985+1986. Apocope and the problem of Proto-Altaic **i̯ă*. *Ural-Altaische Jahrbücher* (NF) 5+6, 187–208 + 184–207.

Miller, Roy Andrew. 1986. *Nihongo: In Defence of Japanese.* London: Athlone Press.

Miller, Roy Andrew. 1987. Proto Altaic **x-*. *Central Asiatic Journal* 31, 19–63.

Miller, Roy Andrew. 1991. Genetic connections among the Altaic languages. In: *Sprung from Some Common Source: Investigations into the Prehistory of Languages*, ed. by Sydney M. Lamb & E. Douglas Mitchell. Stanford: University Press, 293–327.

Miller, Roy Andrew. 1992–1993. On some petrified case formations in the Altaic languages. *Acta Orientalia Academiae Scientiarum Hungaricae* 46/2–3, 288–310.

Miller R.A. 1994. The original geographic distribution of the Tungus languages. In: *Non-Slavic Languages of the USSR*, ed. by H. I. Aronson. Columbus (OH): Slavica Publishers, 272–297.

Miller, Roy Andrew. 1996. *Languages and History. Japanese, Korean, and Altaic*. Bangkok: White Orchid Press (The Institute for Comparative Research in Human Culrure).

Miller, Roy Andrew. 2003. A third pillar of the Altaic hypothesis. *Acta Orientalia Academiae Scientiarum Hungaricae* 56, No. 2/4, 201–236. https://doi.org/10.1556/AOrient.56.2003.2-4.9

Miller, Roy Andrew. 2003–2004. Review of Starostin, Sergei & Dybo, Anna & Mudrak, Oleg with assistance of Ilya Gruntov & Vladimir Glumov: Etymological Dictionary of the Altaic Languages. *Ural-Altaische Jahrbücher*, N.F. 18, 215–225.

Miller, Roy Andrew. 2008a. Comparing Japanese and Korean. In: *Past Human Migrations in East Asia: Matching Archaeology, Linguistics and Genetics*, ed. by Alicia Sanchez-Mazas, Roger Blench, Malcolm Ross, Ilja Pejros & Marie Lin. London: Routledge (Routledge Studies in the Early History of Languages 5), 263–286.

Miller, Roy Andrew. 2008b. The Altaic Aorist in **-Ra* in Old Korean. In: *Evidence and counterevidence: essays in honour of Frederik Kortlandt*, ed. by Alexander Lubotsky. Amsterdam: Rodopi (Studies in Slavic and general linguistics 32–33), 267–282.

Miller, Roy Andrew & Street, John C. 1975+1978. *Altaic elements in Old Japanese.* Part I-II (draft version). Madison, Wisconsin: The authors.

Miyake, Marc Hideo. 2003. *Old Japanese: a phonetic reconstruction*. London: Routledge.

ML = Janhunen, Juha, ed. 2003. *The Mongolic Languages*. London–New York: Routledge.

Molino, Giovanni. 1641. *Dittionario della Lingua Italiana-Turchesca.* Rome: A. M. Gioiosi.

Möllendorf, Paul G. von. 1892. *Manchu Grammar with Analysed Texts*. Shanghai: American Presbyterian Mission Press.

Moravcsik, Gyulya. 1958. *Byzantinoturcica* II: *Sprachreste der Türkvölker in den byzantinischen Quellen*$_2$. Berlin: Akademie-Verlag.

Mostaert, A. 1941–1944. *Dictionnaire ordos*, 3 vols. Peking: Monumenta Serica Monograph Series 5.

Mostaert, A. & A. de Smedt. 1929+1930. Le dialecte monguor parlé par les Mongols du Kansou occidental. Ière Partie: Phonétique. *Anthropos* 24 (5/6), 801–815 + 25 (3/4), 657–669.

Mostaert, Antoine & de Smedt, Albrecht. 1933. *Le dialecte monguor parlé par les Mongols du Kansou occidental*. IIIe Partie: *Dictionnaire monguor-français*. Pei-p'ing: Imprimerie de l'Université Catholique.

Mostaert, A. & A. de Smedt. 1945. *Le dialecte monguor parlé par les Mongols du Kansou occidental*. IIe Partie: *Grammaire*. Pékin: Monumenta Serica Monograph VI. Reprint The Hague – London – Paris: Mouton (Indiana University Publications – Uralic and Altaic Series, vol. 30 – 1964).

Moxir, M.V. 1893. *Kumyksko-russkij slovaŕ*. In: *Sbornik materialov dlja opisanija mestnostej i plemen Kavkaza*, vyp. XVII. Tiflis.

MSFOu = Mémoires de la Société Finno-Ougrienne.

Mu, Benli & Zhu, Xiangdong (chairmen of editorial board). 2003. *2000nian renkou pucha zhongguo minzu renkou ziliao* (Tabulation on nationalities of 2000 population census of China), Vol. 1+2. Beijing: Minzu chubanshe.

Mudrak, Oleg A. 1983. *Rekonstrukcija pramongoľskoj sistemy glasnyx*. Moskva: Moskovskij gosudarstvennyj univerzitet – Filologičeskij fakuľtet (Diplomnaja rabota / Thesis).
<http://altaica.ru/LIBRARY/mudrak/mudrak_dipl.pdf>

Mudrak, Oleg A. 1985. K voprosu o čžurčžeńskoj fonetike. In: *Jazyki Azii i Afriki* (*Fonetika. Leksikologija. Grammatika*). Moskva: Nauka, 131–140.

Mudrak, Oleg A. 1987. K voprosu o palatalizacii načaľnyx soglasnyx v čuvašskom jazyke. In: *Voprosy čuvašskoj fonetiki i morfologii*. Čeboksary: Naučno-issledovateľskij institut jazyka, literatury, istorii i ėkonomiki pri Sovete Ministrov Čuvašskoj SSR, 17–34.

Mudrak, Oleg A. 1988. Znaki čžurčžeńskogo pišma. In: *Sinxronija i diaxronija v lingvističeskix issledovanijax*. Moskva: Institut vostokovedenija, 185–210.

Mudrak, Oleg A. 1989. Specifičeskie droblenija konsonantnyx refleksov v čuvašskom. In: *Lingvističeskaja rekonstrukcija i drevnejšaja istorija Vostoka*, Časť 1. Moskva: Nauka (Institut vostokovedenija AN SSSR), 215–223.

Mudrak, Oleg A. 1993. *Istoričeskie sootvetstvija čuvašskix i tjurkskix glasnyx. Opyt rekonstrukcii i interpretacii*. Moskva: Institut vostokovedenija – Rossijskaja Akademija nauk.

Mudrak, Oleg A. 2005a. Zametki o jazyke i kuľture dunajskix bulgar. *Aspekty komparatistiki* 1 (Moscow – *Orientalia et Classica*: *Trudy Instituta vostočnyx kuľtur i antičnosti* VI), 83–106.

Mudrak, Oleg A. 2005b. Razvitie tjurkskogo **a* v uzbekskom jazyke. In: *Altajskie jazyki i vostočnaja filologija. Pamjati Ė.R. Teniševa*, red. K.N. Bičeldej, G.F. Blagova, A.V. Dybo, I.V. Kormušin, D.M. Nasilov, G.C. Pjurbeev. Moskva: Institut jazykoznanija RAN / Vostočnaja literatura RAN, 249–257.

Mudrak, Oleg A. 2008. Razvitie sočetanij s **ł* v praaltajskom jazyke. In: *Aspekty komparativistiki*, vypusk 2 – *Orientalia et Classica: Trudy Instituta vostočnyx kuľtur i antičnosti*, vypusk XI (Moskva), 83–106.

Mudrak, Oleg A. 2009. *Klassifikacija tjurkskix jazykov i dialektov s pomoščju metodov glottoxronologii na osnove voprosov po morfologii i istoričeskoj fonetike.* Moskva: Rossijskij gosudarstvennyj gumanitarnyj universitet.

Mudrak, Oleg A. 2010. Interpretacii innovativnyx izogloss jazykov i dialektov kypčackoj podgruppy. In: *Aktuaľnye problemy dialektologii jazykov narodov Rossii. Materialy X regionaľnoj konferencii*. Ufa, 134–139.

Müller, Friedrich. 1895[1896]. Das Personal-Pronomen der altaischen Sprachen. *Sitzungsberichte der philosophisch-historischen Classe der kaiserlichen Akademie der Wissenschaften* 134/1, 1–7.

Munkácsi, Bernát. 1887–1890a. Csuvas nyelvészeti jegyzetek [Linguistic notes on Čuvaš]. *Nyelvtudományi Közlemények* 21, 1–44.

Munkácsi, Bernát. 1887–1890b. Ujabb adalékok a magyar nyelv török elemeihez [Further data on the Turkic elements in the Hungarian language]. *Nyelvtudományi Közlemények* 21, 115–129.

Murayama, Shichiro. 1958. Einige Formen der Stammverkürzung in den altaischen Sprachen. *Oriens* 11, 225–230.

Murayama, Shichiro. 1962a. Etymologie des altjapanischen Wortes *irö* “Farbe, Gesichtsfarbe, Gesicht”. *Ural-Altaische Jahrbücher* 34, 107–112.

Murayama, Shichirō. 1962b. Nihongo oyobi Kōkurigo no sūshi – Nihongo keitō mondai ni yosete. *Kokugogaku* 48, 1–11.

Murayama, Shichiro. 1966. Mongolisch und Japanisch – ein Versuch zum lexikalischen Vergleich. In: *Collectanea Mongolica* (*Fs. Rintchen*). Wiesbaden: Harrassowitz (Asiatische Forschungen 17), 153–156.

Murayama, Shichiro. 1975. Altaische Komponente der japanischen Sprache. In: *Researches in Altaic Languages.* 14th *Meeting of the Permanent International Altaistic Conference* (Szeged, Aug 1971), ed. by Louis Ligeti. Budapest: Akadémiai Kiadó, 181–188.

Murayama, Shichiro. 1976. Tungusica-Japonica. *Ural-Altaisches Jahrbücher* 48, 186–187.

Musaev, Kenesbaj M. 1977. *Kratkij grammatičeskij očerk karaimskogo jazyka*. Moskva: Nauka.

Musaev, Kenesbaj M. 1984. *Leksikologija tjurkskich jazykov*. Moskva: Nauka.

N = Numerals collected by Eugene Chan at the website <http://lingweb.eva.mpg.de/numeral/>

Nagy, Louis J. 1960. A Contribution to the Phonology of an unknown East-Mongolian Dialect. *Acta Orientalia Academiae Scientiarum Hungaricae* 10, 269–294.

Nafikov, Šamil V. 2008. *Materialy k kratkomu ėtimologičeskomu slovarju baškirskogo jazyka*. Ufa: Izdateľstvo Baškirskogo gosudarstvennogo pedagogičeskogo universiteta im. M. Akmully.

Nakagawa, Masako. 2003. The *Shan-hai ching* and *Wo*: A Japanese Connection. *Sino-Japanese Studies* 15, 45–55.
<http://chinajapan.org/articles/15/nakagawa15.45-55.pdf>

Nalivkin, V. & Nalivkina, M. 1884. *Russko-sartovskij i sartovo-russkij slovaŕ*. Kazań.

Nam, Pung-hyun. 2012. Old Korean. In: *The Languages of Japan and Korea*, David N. Tranter. London: Routledge, 41–72.

Nasidze, Ivan et al. 2005. Genetic Evidence for the Mongolian Ancestry of Kalmyks. *American Journal of Physical Anthropology* 128, 846–854. https://doi.org/10.1002/ajpa.20159

Nasilov, D.M. 1971. O sposobax vyraženija vidovyx značenij v altajskix jazykax. In: *Problema obščnosti altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 366–376.

Nasilov, D.M. 1978. Formy vyraženija sposobov glagoľnogo dejstvija v altajskix jazykax (v svjazi s problemoj glagoľnogo vida). In: *Očerki sravniteľnoj morfologii altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 88–177.

Nasilov, Vladimir M. 1961. *Jazyk orxono-jenisejskix pamjatnikov*. Moskva: Izdateľstvo vostočnoj literatury.

Nâsirî, Abdülkayyum. 1878. *Tatarsko-russkij slovaŕ*. Kazań.

Nâsirî, Abdülkayyum. 1892. *Polnyj russko-tatarskij slovaŕ*. Kazań.

Nauta, Ane. 1972. Rhotazismus, Zetazismus und Betonung im Türkischen. *Central Asiatic Journal* 16, 1–13.

Németh, Julius. 1912a. Die türkisch-mongolische Hypothese. *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 66/4, 549–576.

Németh, Gyula. 1912b. Egy török-mongol hangtörvény [A Turkish-Mongolian sound law]. *Nyelvtudományi Közlemények* 41, 401–412.

Németh, Julius. 1914a. Über den Ursprung des Wortes *šaman* und einige Bemerkungen zur turkisch-mongolischen Lautgeschichte. *Keleti Szemle* 14, 240–249.

Németh, Gyula. 1914b. A török-mongol nyelvviszonyhoz [To the Turkish-Mongolian linguistic relations]. *Nyelvtudományi Közlemények* 43, 126–142.

Németh, Julius (Gyula). 1927. Der Volksname Türk. *Körösi Csoma-Archiv* 2, Heft 4, 275–281.
Nevskiy, Nikolay. 2015. Nikolay Nevskiy's *Miyakoan dictionary: reconstruction from the manuscript and its ethnolinguistic analysis*, ed. by Aleksandra Jarosz. Poznań: PhD. Thesis.
Nikolaeva, Irina A. & Tolskaya, Maria. 2001. *A Grammar of Udihe*. Berlin: Mouton de Gruyter.
Nişanyan, Sevan. 2007. *Sözlerin Soyağacı – Çağdaş Türkçe'nin Etimolojik Sözlüğü*, 3rd ed. Istanbul: Adam Y.
<https://www.nisanyansozluk.com/>
Norman, Jerry. 1977. The evolution of Proto-Tungusic **t* to Manchu **s*. *Centrial Asiatic Journal* 21, 229–233.
Norman, Jerry. 1978. *A Concise Manchu–English Lexicon*. Seattle-London: University of Washington Press.
Norman, Jerry. 2009. A New Look at Altaic. *Journal of the American Oriental Society* 129/1, 83–89.
Norman, Jerry. 2013. *A Comprehensive Manchu–English Dictionary*. Cambridge (Mass.): Harvard University Press (Asia Center).
Normanskaja, Julija. 2005. Geografičeskaja lokalizacija pratjurkov po dannym florističeskoj leksiki, I. In: *Altajskie jazyki i vostočnaja filologija. Pamjati Ė.R. Teniševa*, red. K.N. Bičeldej, G.F. Blagova, A.V. Dybo, I.V. Kormušin, D.M. Nasilov, G.C. Pjurbeev. Moskva: Institut jazykoznanija RAN / Vostočnaja literatura RAN, 300–324.
Norquest, Peter. 2016. *A phonological reconstruction of Proto-Hlai*. Leiden: Brill.
Novikova, Klavdija A. 1960. *Očerki dialektov ėvenskogo jazyka, Ol'skij govor*, I. Moskva – Leningrad.
Novikova, Klavdija A. 1971a. K ėtimologii nazvanij sobaki v tunguso-mańčžurskix jazykax. In: *Problema obščnosti altajskix jazykov*. Leningrad: Nauka, 176–190.
Novikova, Klavdija A. 1971b. Inojazyčnye ėlementy v tunguso-mańčžurskix naimenovanijax životnyx. In: *Problema obščnosti altajskix jazykov*. Leningrad: Nauka, 236–255.
Novikova, Klavdija A. 1972. Inojazyčnye ėlementy v tunguso-mańčžurskoj leksike, otnosjaščej k životnomu miru. In: *Očerki sravniteľnoj leksikologii altajskix jazykov*. Leningrad: Nauka, 104–149.
Novikova, Klavdija A. 1979. Nazvanija domašnix životnyx v tunguso-mańčžurskix jazykax. In: *Issledovanija v oblasti ėtimologii altajskix jazykov*. Leningrad: Nauka, 53–134.
Novikova, Klavdija A. 1980. *Očerki dialektov ėvenskogo jazyka*. Leningrad: Nauka.
Novikova, Klavdija A. 1984. Nazvanija životnyx v tunguso-mańčžurskix jazykax. In: *Altajskie ėtimologii*, ed. by V.I. Cincius & L.V. Dmitrieva. Leningrad: Nauka, 180–218.
Novikova, Klavdija A. & Sem, Lidija I. 1997. Orokskij jazyk. In: *Jazyky mira: Tungusomańčžurskie jazyki*. Moskva: Indrik.
Nugman, Mustafa. 1969. XVII–XVIII jəzlərdəge rusča-tatarča kulъjazma süzleklər. Kazan: Kazan un-ta nəšr / *Russko-tatarskie rukopisnye slovari XVII–XVIII vekov*. Kazan: Izdateľstvo Kazanskogo universiteta.
Nugteren, Hans. 1997. On the Classification of the 'Peripheral' Mongolic Languages. In: *Historical and Linguistic Interaction between Inner-Asia and Europe*, ed. by Árpád Berta. Szeged: Studia Uralo-Altaica 39, 207–216.
Nugteren, Hans. 2003. Shira Yughur. In: *The Mongolic Languages*, ed. by Juha Janhunen. London: Routledge, 265–285.

Nugteren, Hans. 2011. *Mongolic Phonology and the Qinghai-Gansu Languages*. Leiden: PhD. Thesis.

Oberfalzerová, Alena. 2013. Jaroslav Vacek – life and work. *Mongolo-Tibetica Pragensia '13. Ethnolinguisitics, Sociolinguistics, Religion and Culture* 6/1, 11–22.

OChDb = Old Chinese Database, by William H. Baxter & Laurent Sagart (Sept 20, 2014). <http://ocbaxtersagart.lsait.lsa.umich.edu/BaxterSagartOCbyMandarinMC2014-09-20.pdf>

Ogawa, Naoyoshi. 2006. *A Comparative Vocabulary of Formosan Languages and Dialects*, edited by Paul Jen-kuei Li & Masayuki Toyoshima. Tokyo: University of Foreign Studies.

Ohno, Susumu. 1955. Nihongo: VIII, rekishi; VIII, keitō. *Gaisetsu*, 262–300.

Ohno, Susumo. 1970. *The origin of the Japanese language*. Tokyo: Japan Cultural Society.

OKRKS = Opyt kratkogo russko-korejskogo slovarja. Kazań 1904.

Ölmez, Mehmet. 2013. Some Notes on Altaic Languages and Common Altaic **d**. In: *A Festschrift for Professor Emeritus Seong Baeg-in on his 80th Birthday, Current Trends in Altaic Linguistics*, ed. by Kim Juwon and Ko Dongho. Seoul: Altaic Soicety of Korea, 599–611.

Onenko, Sulungu N. 1980/1986. *Nanajsko-russkij slovar* / *Russko-nanajskij slovaŕ*. Moskva: Loča Xeseni / Russkij jazyk.

Orlovskaja, M. N. 1984. *Jazyk 'Altan Tobči'*. Moskva: Institut vostokovedenija AN SSSR & Nauka.

Orlovskaja, M. N. 2000. *Jazyk mongol'skix tekstov XIII–XIV vv.* Moskva: Institut vostokovedeniia RAN.

Orozubaeva, B.O. 1997. Kirgizskij jazyk. In: *TJ*, 286–297.

Oskolskaya, Sonya. 2018. The classification of the Tungusic languages. In: *Workshop on the historical comparison of the Transeurasian languages* (9th January 2018, Max Planck-Institute, Jena).

Ostapirat, Weera. 1999. *Proto-Kra*. Berkeley: University of California PhD dissertation.

Osterkamp, Sven. 2012[2014]. Notes on the Manuscript Precursors of Collado's *Ars grammaticæ Iaponicæ lingvæ* in the British Library (Sloane Ms. 3459) and Especially Biblioteca Apostolica Vaticana (Borg. lat. 771). *Bochumer Jahrbuch zur Ostasienforschung* 36, 199–212.

Osterkamp, Sven. 2015. A Sketch History of Pre-Chamberlainian Western Studies of Ryukyuan. In: *Handbook of the Ryukyuan Languages: History, Structure, and Use*, ed. by Patrick Heinrich, Shinshō Miyara & Michinori Shimoji. Berlin – Boston: De Gruyter Mouton, 61–80.

Ostroumov, N., Il'minskij, N.I. & Voskresenskij, A.A. 1892. *Tatarsko-russkij slovaŕ*. Kazań.

Oyanguren de Santa Inés, Melchor. 1738. *Arte de la lengua japona*. Mexico: Joseph Bernardo de Hogal, ministro, ê impressor del Real, y Apostolico Tribunal de la Santa Cruzada.

Ozawa, Shigeo. 1968. *Kodai Nihongo to chūsei Mongorugo – sono jakkan no tango no hikaku kenkyū*. Tokyo: Kazama shobō.

Paasonen, Heikki. 1908. *Csuvas szójegyzék* [Chuvash word-list]. Budapest.

Paasonen, Heikki. 1913. A magyar nyelv régi török jövevényszavai [Old Turkic loan-word in Hungarian] {Review on Gombocz 1912}. *Nyelvtudományi Közlemények* 42, 36–68.

Pagès, Léon. 1868. *Dictionnaire Japonais-Français*. Paris: Firmin Didot frères, fils etc. (French translation of Rodrigues 1603–04).

Pallas, Peter Simon. 1776–1801. *Sammlungen historischer Nachrichten über die mongolischen*

Völkerschaften, I-II. St. Peterburg: Kaiserliche Akademie der Wissenschaften (Reprint – Graz: Akademische Druckund Verlagsanstalt 1980).

Pallas, Peter Simon. 1787–89. *Linguarum totius orbis vocabularia comparativa / Sravniteľnye slovari vsěxъ jazykovъ i narečij*, I-II. Sanktpeterburg: Šnor.

Panfilov, V.Z. 1973. Nivxsko-altajskie jazykovye svjazi. *Voprosy jazykoznanija* 1973/6, 3–12.

Da Parigi, Bernardo. 1665. *Vocabolario Italiano Turchesco* (Tradotto dal Francese nell' Italiano con la fatica dal P.F. Pietro d'Abbauilla). Rome: Stamperia Delia Sacra Congregazione di Propaganda Fide.

Paškov, B. K. 1963. *Mańčžurskij jazyk*. Moskva: Izdatel'stvo vostočnoj literatury.

Patrie, James. 1982. *The Genetic Relationship of the Ainu Language*. Honolulu: University of Hawai'i Press (Oceanic Linguistics Special Publications, No. 17). <https://www.jstor.org/stable/pdf/20006692.pdf>

Pavet de Courteille, Abel. 1870. *Dictionnaire Turk-Oriental: Destinée principalement à faciliter la lecture des ouvrages de Bâber, d'Aboul-Gâzi, de Mir Ali-Chir Nevâï, et d'autres ouvrages en langues touraniennes*. Paris: Imprimerie impériale; reprint Amsterdam: Philo Press 1972.

Pavlinskaja, L. R. 2008. *Burjaty. Očerki ėtničeskoj istorii (XVII – XIX vv.).* Sankt-Peterburg: Evropejskij Dom.

Pedersen, Holger. 1903. Türkische Lautgesetze. *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 57/3, 535–561.

Pekarskij, Ė.K. 1899–1930, reedition 1958–1959. *Slovaŕ jakutskogo jazyka*. Jakutsk – Petrograd / Leningrad: Izdanie Akademii nauk SSSR.

Pellard, Thomas. 2009. *Ōgami. Éléments de description d'un parler du sud des Ryūkyū*. Paris: PhD. Thesis (Ecole des Hautes Etudes en Sciences Sociales).

Pellard, Thomas. 2015. The linguistic archeology of the Ryukyu Islands. In: *Handbook of the Ryukyuan languages: History, structure, and use*. In: Heinrich, Patrick; Miyara, Shinsho, & Shimoji, Michinori. De Gruyter Mouton, 13–37.

Pellard, Thomas. 2020. Ryukyuan and the reconstruction of proto-Japanese-Ryukyuan. In: *Handbook of Japanese historical linguistics* , ed. by Frellesvig, B., Kinsui, S. & Whitman, J. (Chapter 3). Berlin: De Gruyter Mouton.

Pelliot, Paul. 1915. L'origine de T'ou-kiue, nom chinois des Turcs. *T'oung Pao*, Second Series, Vol. 16, No. 5, 687–689.

Pelliot, Paul. 1922. Le véritable auteur des Elementa Linguae Tartaricae. *T'oung-pao* 21, 367–386. https://doi.org/10.1163/156853222X00123

Pelliot, Paul. 1925. Les mots à *h* initiale, aujourd'hui amuie dans le Mongol des XIIIe et XIVe siècles. *Journal Asiatique* 206, 193–263.

Pendse, Liladhar R. 2015. The Nineteenth-Century World of Turkic Dictionaries: An Overview. *Slavic & East European Information Resources*, 16/1–2, 32–89. https://doi.org/10.1080/15228886.2015.1031063

Pengling, Wang. 2018. *Linguistic Mysteries of Ethnonyms in Inner Asia*. London: Lexington Books.

Petrova, Taisija I. 1936. *Uľčskij dialekt nanajskogo jazyka*. Moskva-Leningrad.

Petrova, Taťjana I. 1967. *Jazyk orokov (uľta)*. Leningrad: Nauka.

Petrova, Taťjana I. 1968. Orokskij jazyk. In: *Jazyki narodov SSSR. Mongol'skie, tungusomaňčžurskie i paleoaziatskie jazyki*, Tom 5, Vinogradov, V. V. i kol (eds). Leningrad: Nauka, 172–190.

Philologiae Turcicae fundamenta, Tomus Primus, ediderunt Jean Deny, Kaare Grønbech, Helmuth Scheel & Zeki Velidi Togan. Wiesbaden: Steiner 1959.

Piggott, Joan R. 1997. *The emergence of Japanese kingship*. Stanford: Stanford University Press.

Piłsudski, Bronisław. 2011. *The Collected Works of Bronisław Piłsudski*, Vol. 4: *Materials for the Study of Tungusic Languages and Folklore*, ed. by Majewicz, Alfred F., in coop. with Ozolina, Larisa V., Simonov, Mixail D., Bulgakova, Tayana, Majewicz, Elzbieta, Roon, Tatyana P., Wicherkiewicz, Tomasz & Winter, Werner. Berlin: De Gruyter Mouton (Trends in Linguistics, Documentation 15–4).

PKE = Ramstedt, Gustaf J. 1982. *Paralipomena of Korean Etymologies*, collected and edited by Songmoo Kho. Helsinki: Mémoires de la société Finno-Ougrienne, Vol. 182.

PL = Parolek, Radegast & Laně, Tomáš. 1995. *Nástin literatury Střední Asie a Sibiře.* Praha: Melantrich.

Polivanov, Evgenij D. 1927/1968. K voprosu o rodstvennyx otnošenijax korejskogo i 'altajskix' jazykov. *Izvestija Akademii nauk SSSR*, serija VI, t. XXI, No 15–17, 1195–1204. Reedition in Polivanov, E.D.: *Stat'i po obščemu jazykoznaniju*, ed. A.A. Leont'jev. Moskva: Glavnaja redakcija vostočnoj literatury, 156–164.

Poppe, Nikolaus. 1924. Die tschuwassischen Lautgesetze. *Asia Major* 1, 775–782.

Poppe, Nikolaj N. 1924. K konsonantizmu altajskix jazykov. *Doklady Rossijskoj Akademii Nauk* 1924, 43–44.

Poppe, Nikolaj N. 1925. Sistema gluxix smyčnyx v altajskix jazykax. *Doklady Rossijskoj Akademii Nauk* – janvaŕ – mart 1925, 11–13.

Poppe, Nikolaus. 1926a. Altaisch und Urtürkisch. *Ungarische Jahrbücher* 6, 94–121. <http://real-j.mtak.hu/7020/1/MTA_UngarischeJahrbucher_06.pdf>

Poppe, Nikolaj N. 1926b. Istorija i sovremennoe položenie voprosa o vzaimnom rodstve altajskix jazykov. In: *Pervyj vsesojuznyj tjurkologičeskij sjezd*, Baku: Obščestvo obsledovanija i izučenija Azerbajdžana (reed. Baku: Nagyl Evy 2011), 139–166.

Poppe, N. 1927. *Materialy dlja isseledovanija tungusskogo jazyka*. Leningrad: Izdateľstvo Akademii nauk SSSR.

Poppe, Nicholas N. 1927–1928. Das mongolische Sprachmaterial einer Leidener Handschrift. *Izvestija Akademii Nauk SSSR* 1927, 1009–1040, 1251–1274; 1928, 55–80.

Poppe, Nikolaj N. 1930. *Dagurskoe narečie*. Leningrad: Izdateľstvo Akademii nauk SSSR.

Poppe, Nikolaj N. 1931. *Materialy po solonskomu jazyku*. Leningrad: Izdateľstvo Akademii nauk SSSR.

Poppe, Nikolaus N. 1934. Über die Sprache der Daguren. *Asia Major* 10, 1–32, 183–220.

Poppe, Nikolaj N. 1937. *Grammatika piśmenno-mongoľskogo jazyka*. Moskva-Leningrad: Izdateľstvo Akademii nauk SSSR.

Poppe, Nikolaj N. 1938. *Mongoľskij slovaŕ Mukaddimat al-Adab*. Moskva-Leningrad: Izdatel'stvo Akademii Nauk SSSR (Repr. 1971 Farnborough: Gregg International Publishers).

Poppe, Nikolaj N. 1941. *Kvadratnaja piśmennosť*. Moskva – Leningrad: Izdateľstvo Akademii nauk SSSR.

Poppe, Nikolaus. 1944. Die Sprache der mongolischen Quadratschrift und das Yüan-ch'ao po-shi. *Asia Major* [N.F.] 1.1., 97–115.

Poppe, Nikolaus. 1951a. *Khalkha-Mongolische Grammatik*, *mit Bibliographie*, *Sprachproben und Glossar*. Wiesbaden: Steiner.

Poppe, Nicholas. 1951b. Gustav John Ramstedt 1873–1950. *Harvard Journal of Asiatic Studies*, Vol. 14, No. 1/2 (Jun., 1951), 315–322.

Poppe, Nicholas. 1952. Plural Suffixes in the Altaic Languages. *Ural-altaische Jahrbücher* 24/3–4, 65–83.

Poppe, Nicholas. 1954. *Grammar of Written Mongolian*. Wiesbaden: Harrassowitz.

Poppe, Nicholas. 1955. *Introduction to Mongolian Comparative Studies*. Helsinki: Suomalais-ugrilainen seura. Memoires de la Société Finno-Ougrienne 110 (reed. 1987).

Poppe, Nicholas. 1957. *The Mongolian Monuments in hP'ags-pa Script*. Wiesbaden: Otto Harrassowitz (Göttinger Asiatische Forschungen, 8).

Poppe, Nikolaus. 1959. Das Jakutische. In: *PTF*, 670–684.

Poppe, Nikolaus. 1960. *Vergleichende Grammatik der altaischen Sprachen:* Teil I: *Vergleichende Lautlehre*. Wiesbaden: Harrassowitz (Porta linguarum orientalium, NS Band 4).

Poppe, Nicholas. 1960/1997. *Buriat Grammar*. Bloomington: Indiana University (Indiana University Publications, Uralic and Altaic Series 2) / Richmond: Curzon (Research and Studies in Uralic and Altaic Languages / American Council of Learned Societies. Research and Studies in Uralic and Altaic Languages / American Council of Learned Societies, 2).

Poppe, Nikolaus. 1964a. Der altaische Sprachtyp. In: *Mongolistik* (Zweite Abschnitt von Altaistik, 5. Band *Handbuch der Orientalistik*). Leiden – Köln: Brill, 1–16.

Poppe, Nikolaus. 1964b. Das Mittelmongolische. In: *Mongolistik* (Zweite Abschnitt von Altaistik, 5. Band *Handbuch der Orientalistik*). Leiden – Köln: Brill, 96–103.

Poppe, Nicholas. 1965. *Introduction to Altaic Linguistics*. Wiesbaden: Harrassowitz.

Poppe, Nicholas. 1966. On some ancient Mongolian loan-words in Tungus. *Central Asiatic Journal* 11, 187–198.

Poppe, Nicholas. 1970. *Mongolian. Language Handbook*. Washington: Center for Applied Linguistics.

Poppe, Nikolaus. 1972. Über einige Verbalstammbildungssuffixe in den altaischen Sprachen. *Orientalia Suecana* 21, 119–141.

Poppe, Nicholas. 1975. Altaic linguistics: an overview. *Sciences of Language* 6, 130–186.

Poppe, Nicholas. 1977. On some Altaic case forms. *Central Asiatic Journal* 21/1, 55–74.

Posch, Udo. 1956. Introduction to a Comparative and Etymological Dictionary of the Mongolian Languages and Dialects. *Davidson Journal of Anthropology* II, 1–137.

Posch, Udo. 1958. On the Affinity of the Altaic Languages I. *Central Asiatic Journal* 3/4, 267–288.

Posch, Udo. 1964. Die altaische Sprachverwandschaft. In: *Mongolistik* (Zweite Abschnitt von Altaistik, 5. Band *Handbuch der Orientalistik*). Leiden – Köln: Brill, 17–38.

Poucha, Pavel. 1961. Die Sprache der Mogholen in Afghanistan und die Teorie der Mischsprachen. In: *Studia Mongolica* 2, 251–270.

Poucha, Pavel. 1967. Von Jaya-Pandita zum Neukalmückischen. *Archív orientální* 35, 383–406.

Preindl, Joseph de. 1790. *Grammaire turque d'une toute nouvelle methode d'apprendre cette langue en peu de semaines avec un vocabulaire enrichi d'anecdotes utiles et agréables*. Berlin.

Pritsak, Omeljan. 1952. Stammesnamen und Titulaturen der altaischen Völker. *Ural-altaische Jahrbücher* 24/1–2, 49–104.

Pritsak, Omeljan. 1954. Mongolisch *yisün* 'neun' und *yiren* 'neunzig'. *Ural-Altaische Jahrbücher* 26, 243–245.

Pritsak, Omeljan. 1955. Die Oberstufenzählung im Tungusischen und Jakutischen. *Zeitschrift der deutschen morgenländischen Gesellschaft* 105, 184–191.

Pritsak, Omeljan. 1964. Der 'Rotazismus' und 'Lambdazismus'. *Ural-altaische Jahrbücher* 35, 337–349.

Pritsak, Omeljan. 1980. Turkology and the comparative study of the Altaic languages. The system of the Old Runic script. *Journal of Turkish Studies* 4, 83–100.

Pritsak, Omeljan. 1985. On the Tunguz Numeral *nadan* 'Seven'. *Hoppo Bunka Kenkyu. Bulletin of the Institute for the Study of North Eurasian Cultures* (Hokkaido University) 17, 205–212.

Pröhle, Wilhelm. 1903–1905. Baskír nyelvtanulmányok [Studies in Baškir linguistic]. *Keleti Szemle* 4, 194–214; 5, 228–271; 6, 12–26.

Pröhle, Wilhelm. 1916–1917. Studien zur Vergleichung des Japanischen mit den uralischen und altaischen Sprachen. *Keleti Szemle* 17, 147–183.

Protoďjakonov, Prokopij. 1901. *Goľdsko-russkij slovaŕ*. Vladivostok: Izvestija Vostočnogo instituta.

PTF = Philologiae Turcicae Fundamenta, I, ed. Jean Deny, et alii. Wiesbaden: Steiner 1959.

Pu = Pulleyblank, Edwin G. 1991. *Lexicon of Reconstructed Pronunciation in Early Middle Chinese, Late Middle Chinese, and Early Mandarin*. Vancouver: UBC Press.

Pucillo, M.P.. 1874/2014. *Opyt russko-korejskogo slovarja*. Sankt Petersburg: Tipografija Gogenfel'den, reprint Nestor-Istorija.

Pulleyblank, Edwin G. 1965. The Chinese Name for the Turks. *Journal of the American Oriental Society* 85/2, 121–125. https://doi.org/10.2307/597981

Pulleyblank, Edwin G. 1991. *Lexicon of Reconstructed Pronunciation in Early Middle Chinese, Late Middle Chinese, and Early Mandarin*. Vancouver: UBC Press.

Qingge'ertai & Li Keyu. 1988. *Tuzuyu he mengguyu*. (Menggu yuzu yuyan fangyan yanjiu congshu, 013). Huhehaote: Neimenngu renmin chubanshe.

R = Ramstedt, Gustaf J. 1952/1957. *Einführung in die altaische Sprachwissenschaft*, II: *Formenlehre*, bearbeitet und herausgegeben von Pentti Aalto. Helsinki: MSFOu 104.2. Quoted according to the Russian translation *Vvedenie v altajskoe jazykoznanie: Morfologija*, translated by L.S. Slonim. Moskva: Izdateľstvo inostrannoj literatury 1957 (= Ramstedt 1957b).

Rä = Räsänen, Martti. 1955b. *Materialien zur Morphologie der Türkischen Sprachen*. Helsinki: Societas Orientalis Fennica. Studia Orientalia, Vol. 21.

Rachewiltz, Igor de. 1996. The Name of the Mongols in Asia and Europe: A Reapprasial. *Études mongoles et sibériennes* 27, 199–210.

Rachewiltz, Igor de & Rybatzki, Volker, with the collaboration of Hung Chin-fu. 2010. *Introduction to Altaic Philology: Turkic, Mongolian, Manchu*. Leiden – Boston: Brill (Handbook of Oriental Studies = Handbuch der Orientalistik. Section 8, Central Asia – 20).

Radloff, Wilhelm. 1882. *Phonetik der nordlichen Türksprachen*. Leipzig: Weigel.

Radloff, Wilhelm {Radlov, Vasilij V.} 1884. *O jazyke kumanov po povodu izdanija kumanskogo slovarja.* Sankt-Peterburg: Tipografija imperatorskoj akademii nauk.

Radloff, Wilhelm. 1893–1911. *Versuch eines Wörterbuchs der Türkdialekte*, I-IV. Sankt Petersburg: Kaiserliche Akademie der Wissenschaften.

Radloff, Wilhelm. 1895. *Die alttürkischen Inschriften der Mongolei*. St. Petersburg: Académie Impériale des Sciences.

Radloff, Wilhelm. 1897. *Grammatische Skizze der alttürkischen Inschriften*. In: *Die alttürkischen Inschriften der Mongolei*: Neue Folge. St. Petersburg-Leipzig: Eggers, 1–129. <http://menadoc.bibliothek.uni-halle.de/ssg/content/structure/776906>

Radloff, Wilhelm. 1901. Zur Geschichte des türkischen Vocalsystems. *Izvestija Akademii nauk*, V serija, XIV № 4, 425–462.

Radloff, Wilhelm. 1909–1912. Altturkische Studien I-VI. *Izvestija Imperatorskoj Akademii Nauk* 6/3, 1213–1220; 6/4, 217–228 & 1025–1036; 6/5, 305–326 & 427–452; 6/6, 747–778.

Rahder, Johannes. 1940a. Phonetic Variations in Japanese. *Monumenta Nipponica* 3/1, 177–181. https://doi.org/10.2307/2382410

Rahder, Johannes. 1940b. Japanese Initial Syllables. *Monumenta Nipponica* 3/2, 525–548. https://doi.org/10.2307/2382595

Rahder, Johannes. 1941. Zahlwörter im Japanischen, Koreanischen und Ainu. *Monumenta Nipponica* 4, 634–644. https://doi.org/10.2307/2382650

Rahder, Johannes.1951. Comparative Treatment of the Japanese Language. *Monumenta Nipponica* 7, 198–208. https://doi.org/10.2307/2382954

Rahder, Johannes.1952. Comparative Treatment of the Japanese Language. *Monumenta Nipponica* 8, 239–288. https://doi.org/10.2307/2383012

Rahder, Johannes.1953. Comparative Treatment of the Japanese Language. *Monumenta Nipponica* 9, 199–257. https://doi.org/10.2307/2382894

Rahder, Johannes.1954. Comparative Treatment of the Japanese Language. *Monumenta Nipponica* 10, 127–168. https://doi.org/10.2307/2382795

Rahder, Johannes.1956. *Etymological Vocabulary of Chinese, Japanese, Korean and Ainu*, Part 1. Tokyo: Sophia University (Monumenta Nipponica Monograph, No. 16).

Rahder, Johannes.1959. Etymological Vocabulary of Chinese, Japanese, Korean and Ainu, Part 3. *Journal of Asiatic Studies* 2/1, 317–406.

Rahder, Johannes.1960. Etymological Vocabulary of Chinese, Japanese, Korean and Ainu, Part 2. *Journal of Asiatic Studies* 2/2, 307–371.

Rahder, Johannes.1961. Etymological Vocabulary of Chinese, Japanese, Korean and Ainu, Part 4. *Orbis* 10, 175–213.

Rahder, Johannes.1963. Etymological Vocabulary of Chinese, Japanese, Korean and Ainu, Part 5. *Orbis* 12, 45–116.

Rajki, Andras. 2006–2009. *Mongolian Etymological Dictionary – a concise etymological dictionary of Khalkha (Modern Mongolian)*. <https://www.academia.edu/12788147/Mongolian_Etymological_Dictionary>

Rajki, Andras. 2007. *A Concise Gagauz Dictionary with etymologies and Turkish, Azerbaijani, Crimean Tatar and Turkmen cognates*. <https://www.academia.edu/12788175/Gagauz_Etymological_Dictionary>

Ramstedt, Gustaf J. 1902a. *Bergtscheremissische Sprachstudien*. Helsinki: *Suomalais-Ugrilaisen Seuran Toimituksia / Mémoires de la Société Finno-Ougrienne* 17. <http://fennougrica.kansalliskirjasto.fi/handle/10024/89840>

Ramstedt, Gustaf J. 1902b. Das Schriftmongolische und die Urgamundart phonetisch verglichen. *Journal de la Société Finno-Ougrienne / Suomalais-Ugrilaisen Seuran Aikakauskirja* 21.2. The Russian translation: *Sravniteľnaja fonetika mongoľskago piśmennago jazyka i xalxasko-urginskago govora*, perevodъ podъ redakciej A-D. Rudneva, dop. avtoromъ. Sankt Peterburgъ 1908.

Ramstedt, Gustaf J. 1903. Über die Konjugation des Khalkha-mongolischen. *Mémoires de la Société Finno-Ougrienne* 19, viii + 1–119.

Ramstedt, Gustav J. 1905. Mogholica. *Journal de la Société Finno-Ougrienn / Suomalais-Ugrilaisen Seuran Aikakauskirja* 23.2, 1–60.

Ramstedt, Gustav J. 1906. Über mongolische pronomina. Mit einem nachtrag über die türkischen possessivsuffixe. *Journal de la Société Finno-Ougrienne* 23.3, 1–20.

Ramstedt, Gustav J. 1907. Über die Zahlwörter der altaischen Sprachen. *Journal de la Société Finno-Ougrienne / Suomalais-Ugrilaisen Seuran Aikakauskirja* 24.1, 1–24.

Ramstedt, Gustaf J. 1912. Zur Verbstammbildungslehre der mongolisch-türkischen Sprachen. *Journal de la Société Finno-ougrienne / Suomalais-Ugrilaisen Seuran Aikakauskirja* 28.3, 1–86. <http://bitig.org/pdf/Ramstedt_Mongolish_Turkischen_Sprachen.pdf>

Ramstedt, Gustaf J. 1913a. Egy állítólagos török-mongol hangtörvény. *Nyelvtudományi közlemények* 42, 69–74.

Ramstedt, Gustaf J. 1913b. Az *ŋ* hang a mongolban és a törökben. *Nyelvtudományi közlemények* 42, 229–238.

Ramstedt, Gustaf J. 1915–1916. Zur mongolisch-türkischen Lautgeschichte, I: Mongolisch-türkisches *č*; II: Mongolisches *ǯ* und seine Vertretung im Türkischen. *Keleti Szemle* 15, 134–159; 16, 66–84.

Ramstedt, Gustaf J. 1916–1920. Ein anlautender stimmloser labial in der mongolisch-türkischen ursprache. *Suomalais-Ugrilaisen Seuran Aikakauskirja / Journal de la Société Finno-Ougrienne*, 32.2, 1–10.

Ramstedt, Gustaf J. 1922–1923. Zur Frage nach der Stellung des Tschuwassischen. *Journal de la Société Finno-ougrienne / Suomalais-Ugrilaisen Seuran Aikakauskirja* 38.1.

Ramstedt, Gustaf J. 1924. Die verneigung in den altaischen sprachen. *Suomalais-Ugrilaisen Seuran Toimituksia / Mémoires de la Société Finno-Ougrienne* 52, 196–215.

Ramstedt, Gustaf J. 1924 (ms.) /1951. A Comparison of the Altaic Language with Japanese. *Journal de la Société Finno-ougrienne / Suomalais-Ugrilaisen Seuran Aikakauskirja* 55/2 (1951), 7–24.

Ramstedt, Gustav J. 1928. Remarks on the Korean languague. *Mémoires de la Société Finno-Ougrienne* 58, 441–453.

Ramstedt, Gustaf J. 1932. Die Palatalisation in den altaischen Sprachen. In: *Mélanges de philologie offerts a M. J. J. Mikkola* (*Suomalaisen-tiedeaktemian Toimituksia / Annales Academiae Scientiarum Fennicae*, Ser. B: 27), 239–251.

Ramstedt, Gustav J. 1933. The nominal postpositions in Korean. *Mémoires de la Société Finno-Ougrienne* 67, 459–464 (Liber Semisaecularis Societatis Fenno-Ugricae).

Ramstedt, Gustaf J. 1933–1935. Über die Entstehung der Verbalflexion mit Personalendung. *Sitzungsberichte der Finnischen Akademie der Wissenschaften* 1933, 144–148.

Ramstedt, Gustav J. 1935. *Kalmückisches Wörterbuch*. Helsinki: Lexica Societatis Fenno-Ugricae, 3.

Ramstedt, Gustaf J. 1935–1937. Über den Ursprung der türkischen Sprache. *Sitzungsberichte der Finnischen Akademie der Wissenschaften* 1935, 81–91.

Ramstedt, Gustav J. 1939/1951. Über die Stellung des Koreanischen. *Journal de la Société Finno-ougrienne / Suomalais-Ugrilaisen Seuran Aikakauskirja* 55/2 (1951), 47–58.

Ramstedt, Gustav J. 1939/1997. *A Korean Grammar*. Helsinki: Mémoires de la Société finno-ougrienne / Suomalais-Ugrilaisen Seuran Toimituksia, 82.

Ramstedt, Gustaf J. 1945. Das deverbale Nomen auf *-i* in den altaischen Sprachen. *Studia Orientalia* 11:6, 1–8.

Ramstedt, Gustav J. 1949. *Studies in Korean Etymology*. Helsinki: *Mémoires de la Société Finno-Ougrienne* 95.

Ramstedt, Gustaf J. 1950. Das deverbale Nomen auf *-m* in den altaischen Sprachen. In: *Commentationes Fenno-Ugricae in honorem Y.H. Toivonen* (*Suomalais-Ugrilaisen Seuran Toimituksia / Mémoires de la Société Finno-Ougrienne* 98), 255–264.

Ramstedt, Gustav J. 1951. *Grammatika korejskogo jazyka*, translated by A.A. Xolodovič from Ramstedt 1939, ed. by B.A. Paškov. Moskva: Izdateľstvo innostrannoj literatury.

Ramstedt, Gustav J. 1952. *Einführung in die altaische Sprachwissenschaft*, II: *Formenlehre*, bearbeitet und herausgegeben von Pentti Aalto. Helsinki: *Mémoires de la Société finno-ougrienne / Suomalais-Ugrilainen Seura Toimituksia*, 104, 2.

Ramstedt, Gustav J. 1953. Studies in Korean Etymology, 2 (Introduction & Index), ed. by Pentti Aalto. Helsinki: *Mémoires de la Société Finno-Ougrienne* 95/2, 1–64.

Ramstedt, Gustav J. 1954. Additional Korean Etymologies, collected and edited by Pentti Aalto. *Journal de la Société Finno-ougrienne / Suomalais-Ugrilaisen Seuran Aikakauskirja* 57/3, 1–23.

Ramstedt, Gustaf J. 1957a. *Einführung in die altaische Sprachwissenschaft*, I: *Lautlehre.* Helsinki: *Mémoires de la Société finno-ougrienne / Suomalais-Ugrilaisen Seuran Toimituksia*, 104, 1.

Ramstedt, Gustaf J. 1957b. *Vvedenie v altajskoe jazykoznanie: morfologija* (Russian translation of Ramstedt 1952 by L.S. Slon, with Preface by N.A. Baskakov). Moskva: Izdateľstvo inostrannoj literatury.

Ramstedt, Gustaf J. 1966. *Einführung in die altaische Sprachwissenschaft* III: *Register*, edited and published by Pentti Aalto. Helsinki: Suomalais-Ugrilainen Seura.

Ramstedt, Gustaf J. 1982. *Paralipomena of Korean Etymologies*, collected and edited by Songmoo Kho. Helsinki: Mémoires de la société Finno-Ougrienne, Vol. 182.

Rassadin, Valentin I. 1971. *Fonetika i leksika tofalarskogo jazyka*. Ulan Ude: Burjatskoe knižnoe izdateľstvo.

Rassadin, Valentin I. 1978. *Morfologija tofalarskogo jazyka v sravniteľnom osveščenii*. Moskva: Nauka.

Räsänen, Martti. 1946. Ein Überblick über die ältesten Denkmäler der türkischen Sprachen. *Studia Orientalia*, XIII: 1.

Räsänen, Martti. 1949. *Materialien zur Lautgeschichte der türkischen Sprachen*. Helsinki: Societas Orientalis Fennica (Studia Orientalia 15).

Räsänen (Rjasjanen), Martti. 1955a. *Materialy po istoričeskoj fonetike tjurkskix jazykov.* Moskva: Izdateľstvo inostrannoj literatury (Russian translation of Räsänen 1949).

Räsänen, Martti. 1955b. *Materialien zur Morphologie der türkischen Sprachen*. Helsinki: Societas Orientalis Fennica (Studia Orientalia 21).

Räsänen, Martti. 1961. Tü. anl. *h*- als Überbleibsel des alt. *p*-. *Ural-altaische Jahrbücher* 33, 146–148.

Räsänen, Martti. 1969–1971. *Versuch eines etymologischen Wörterbuchs der Türksprachen*. Helsinki: Lexica Societatis Fenno-Ugricae XVII, 1–2.

Rask, Rasmus. 1834. Afhandling om den finniske Sprogklasse. In: Rasmus K. Rask: *Samlede tildels forhen utrykte Afhandlinger* I. København: Det Poppske Bogtrykkeri, 1–46.

Raximov, T. R. 1970. *Kitajskie elementy v sovremennom ujgurskom jazyke*. Moskva: Nauka.

Redhouse, James W. 1846. *Grammaire raisonnée de la langue ottomane*. Paris: Gide et Cie, Libraires-éditeurs.

Redhouse, James W. 1855. *The Turkish Vade-Mecum of Ottoman Colloquial Language, Containing a Concise Ottoman Grammar, a Carefully Selected Vocabulary, Alphabetically Arranged in Two Parts – English and Turkish, and Turkish and English*. London: Harrison.

Redhouse, James W. 1856. *An English and Turkish Dictionary in two parts, English and Turkish, and Turkish and English*. London: Quaritch.

Redhouse, James W. 1884a. *Simplified grammar of the Ottoman-Turkish language*. London: Trübner.

Redhouse, James W. 1884b. *A Turkish and English lexicon shewing the English significations of the Turkish terms*, 3rd edition. Constantinople: Boyajian (first edition 1860).

Refsing, Kirsten. 1986. *The Ainu language: the morphology and syntax of the Shizunai dialect*. Arhus: University Press.

Rešetov, V. V. 1966. Uzbekskij jazyk. In: *JN* II, 340–362.

Rhasis, Georges. 1828–1829. *Vocabulaire français-turc*. Saint-Pétersbourg: L'imprimerie de l'Académie impériale.

Rjasjanen, Martti. 1955. *Materialy po istoričeskoj fonetike tjurkskix jazykov.* Moskva: Izdateľstvo inostrannoj literatury.

RO = *Rocznik orientalistyczny*.

Ro = Robbeets, Martine I. 2005. *Is Japanese Related to Korean, Tungusic, Mongolic and Turkic?* Wiesbaden: Harrassowitz.

Robbeets, Martine I. 2000. A palatal-nasal genitive in Altaic? In: *Problemy izučenija daľnego rodstva jazykov na rubeže 3–go tysjačeletija. Tezisy i doklady konferencii*. Moskva: Rossijskij gosudarstvennyj gumanitarnyj universitet, 218–219.

Robbeets, Martine I. 2005a. *Is Japanese Related to Korean, Tungusic, Mongolic and Turkic?* Wiesbaden: Harrassowitz (Turkologica 64).

Robbeets, Martine I. 2005b. Does Doerfer's Zufall mean 'cognate'? The case of the initial velar correspondence in Altaic. *Turkic Languages* 8, 146–178.

Robbeets, Martine I. 2007a. Koguryo as a Missing Link. In: *Korea in the Middle. Festschrift for Boudewijn Walraven*, ed. by Remco Breuker. Leiden: CNWS, 118–141.

Robbeets, Martine I. 2007b. How the actional suffix chain connects Japanese to Altaic. *Turkic Languages* 11/1, 3–58.

Robbeets, Martine I. 2007c. The causative-passive in the Trans-Eurasian languages. *Turkic Languages* 11/2, 235–278.

Robbeets, Martine I. 2008. If Japanese is Altaic, how can it be so simple? In: *Evidence and Counter-Evidence – Festschrift Frederik Kortlandt*, edited by Alexander Lubotsky, Jos Schaeken, & Jeroen Wiedenhof. Amsterdam – New York: Rodopi, 337–367.

Robbeets, Martine I. 2009. The historical comparison of Japanese, Korean and the Trans-Eurasian languages. *Revista Linguistica* 81, 261–287.

Robbeets, Martine I. 2010. Transeurasian: Can verbal morphology end the controversy? In: *Transeurasian verbal morphology in a comparative perspective: genealogy, contact, chance*, ed. by Lars Johanson & Martine Robbeets. Wiesbaden: Harrassowitz (Turcologica 78), 81–114.

Robbeets, Martine I. 2012. Shared verb morphology in the Transeurasian languages: copy or cognate? In: *Copies vs. cognates in bound morphology*, ed. by Lars Johanson & Martine Robbeets. Leiden: Brill (Brill's Studies in Language, Cognition and Culture), 427–446.

Robbeets, Martine I. 2014a. A velar fricative in proto-Transeurasian. In: *Turcology and Linguistics – Éva Ágnes Csató Festschrift*, edited by Nurettin Demir. Ankara: Hacettepe Universitesi, 375–400.

Robbeets, Martine I. 2014b. The development of negation in the Transeurasian languages. In: *On diversity and complexity of languages spoken in Europe and North and Central Asia*, ed. by Pirkko Suihkonen & Lindsay J. Whaley. Amsterdam: Benjamins, 401–420.

Robbeets, Martine I. 2014c. The Japanese inflectional paradigm in a comparative perspective. In: *Paradigm change in the Transeurasian languages and beyond*, ed. by Martine Robbeets, & Walter Bisang. Amsterdam: Benjamins (Studies in Language Companion Series 161), 197–234.

Robbeets, Martine I. 2014d. Common denominal verbalizers in the Transeurasian languages: borrowed or inherited? In: *Borrowed morphology*, ed. by Nino Amiridze, Peter Arkadiev & Francesco Gardani. The Hague: Mouton De Gruyter (Language Contact and Bilingualism 8), 137–154.

Robbeets, Martine I. 2015. *Diachrony of verb morphology: Japanese and the Transeurasian languages*. Berlin: Walter de Gruyter.

Robbeets, Martine I. 2016a. Transeurasian basic verbs: Copy or cognate? In: *The Uppsala Meeting. Proceedings of the 13th International Conference on Turkish Linguistics*, ed. by Éva Csató, Birsel Karakoç & Astrid Menz. Wiesbaden: Harrassowitz, 199–212.

Robbeets, Martine I. 2016b. Insubordination and the establishment of genealogical relationship. In: *Dynamics of insubordination*, ed. by Nicholas Evans & Honore Watanabe. Amsterdam: Benjamins (Typological Studies in Language), 209–245.

Robbeets, Martine I. 2017a. Like ripples in a pond. Basic vocabulary linking Japonic to Turkic. In: *Prof. Dr. Talât Tekin hatıra kitabı* [Obituary volume for Prof. Dr. Talât Tekin]. Edited by Sertkaya, Osman Fikri; Eker, Süer; Şirin, Hatice & Uçar, Erdem. İstanbul: Uluslararası Türk Akademisi [International Turkic Academy], 885–914.

Robbeets, Martine I. 2017b. The language of the Transeurasian farmers. In: *Language Dispersal beyond Farming*, ed. by Martine Robbeets & Alexander Savelyev. Amsterdam: Benjamins, 93–121.

Robbeets, Martine I. 2017c. Transeurasian core structures in Turkic. *Turkic Languages* 21/1, 3–34.

Robbeets, Martine I. 2017d. Japanese, Korean and the Transeurasian languages. In: The *Cambridge handbook of areal linguistics*, ed. by Raymond Hickey. Cambridge: Cambridge University Press (Cambridge Handbooks in Language and Linguistics), 586–626.

Robbeets, Martine I. 2017e. Proto-Transeurasian: where and when? *Man in India* 95, 921–946.

Robbeets, Martine I. 2017f. Austronesian influence and Transeurasian ancestry in Japanese: A case of farming/language dispersal. *Language Dynamics and Change* 7/2, 1–42.

Robbeets, Martine I. 2017g. The development of finiteness in the Transeurasian languages. *Linguistic* 55/3, 489–523.

Robbeets, Martine I. & Bouckaert, Remco. 2018. Bayesian phylolinguistics reveals the internal structure of the Transeurasian family. *Journal of Language Evolution*, 2018, 145–162. https://doi.org/10.1093/jole/lzy007

Rocchi, Luciano. 2007. *Ricerche sulla lingua osmanlı del XVI secolo. Il corpus lessicale turco del manoscritto fiorentino di Filippo Argenti* (1533). Wiesbaden: Harrassowitz.

Rocchi, Luciano. 2011. *Il dizionario turco-ottomano di Arcangelo Carradori* (1650). Trieste: EUT.

Rocchi, Luciano. 2012. Il *«Dittionario della lingua turchesca»* di Pietro Ferraguto (1611). Trieste: EUT.

Rocchi, Luciano. 2015. Bernardo Da Parigi's Vocabolario Italiano-Turchesco (1665): An Ottoman-Turkish lexicographical monument still neglected. *Studia Linguistica Universitatis Iagellonicae Cracoviensis* 132, 263–269. https://doi.org/10.4467/20834624SL.15.023.4430

Rocchi, Luciano. 2016. Il glossario italo-turco contenuto in un codice fiorentino del XVI secolo. *Zeitschrift für romanische Philologie* 132, 1049–1064.

Rodrigues, João (?). 1603–1604. *The Nippo Jisho – Vocabulario da Lingoa de Iapam com Adeclaração em Portugues, Feito por Alguns Padres, e Irmãos da Companhia de Iesu*. Nagasaki 1603, with supplements 1604 (see Cooper 1976).

Rodrigues, João. 1604–1608. *Arte da Lingoa de Iapam*, 1–3. Nangasaqui [Nagasaki]: Collegio de Iapão da Companhia de Iesv 1604–1608.

Rodrigues, João. 1620. *Arte Breue da Lingoa Iapoa*. Amacao [Macao]: Collegio da Madre de Deos da Companhia de Iesv 1620.

Rodrigues, João (?). 1630. *Vocabulario de Japon, declarado primero en Portugues por los Padres de la Companfa de IESVS de aquel reyno, y ahora en Castellano en el Colegio de Santo Thomas de Manila*, Manila {Spanish translation of Rodrigues 1603–04}.

Röhrborn, Klaus. 1977–1998. *Uigurisches Wörterbuch, Sprachmaterial der vorislamischen turkischen Texte aus Zentralasien,* Lieferung 1: *a – agrıg*, 1977: 1–72; Lieferung 2: *agrıglan- – anta*, 1979: 73–148; Lieferung 3: *anta – asanke*, 1981: 149–224; Lieferung 4: *asankelıg – ayat-*, 1994: 225–298; Lieferung 5: *ayatıl- – ämgäklig*, 1998: 299–372; Lieferung 6: *ämgäksin- – ärŋäk*, 373–446; Wiesbaden: Steiner.

Röhrborn, Klaus. 2010–2015. *Uigurisches Wörterbuch. Sprachmaterial der vorislamischen*

turkischen Texte aus Zentralasien. Neubearbeitung I: Verben. Band 1: *ab- – äzüglä-*; II: Nomina – Pronomina – Partikeln. Band 1: *a – asvık*. Stuttgart: Steiner. <https://urts99.uni-trier.de/uig_woerterbuch/pdf_link_crossBrowser.html>

Romanova, A. V. & Myreeva, A. N. 1968. *Dialektologičeskij slovaŕ ėvenkijskogo jazyka*. Leningrad: Nauka.

Romanova, Agnija V., Myreeva, Anna N. & Baraškov, Petr P. 1975. *Vzaimovlijanie ėvenkijskogo i jakutskogo jazykov*. Leningrad: Nauka.

Róna-Tas, András. 1961. A Dariganga Vocabulary. *Acta Orientalia Academiae Scientiarum Hungaricae* 13, 147–174.

Róna-Tas, András {Rona-Taš, A.}. 1974. Obščee nasledie ili zaimstvovanija? (K probleme rodstva altajskix jazykov). *Voprosy jazykoznanija* 1974/2, 31–45.

Róna-Tas, András. 1976. On the meaning of "Altaic". In: *Tractata Altaica: Denis Sinor sexagenario optime de rebus altaicis merito dedicata*, ed. by Heissing, W., Krueger, F. J., Oynas, F. J., Schütz, E. Wiesbaden: Harrassowitz, 549–556.

Róna-Tas, András. 1978. Julius Németh – Life and work. *Acta Orientalia Academiae Scientiarum Hungaricae* 32/3, 261–284.

Róna-Tas, András. 1986. *Language and History. Contributions to Comparative Altaistics*. Szeged: Universitas szegediensis & JATEPress (Studia Uralo-Altaica 25).

Róna-Tas, András. 1987. On the Development and Origin of the East Turkic Runic Script.' *Acta Orientalia Academiae Scientiarum Hungaricae* 41, 7–14.

Róna-Tas, András. 1991. *An Introduction to Turkology.* Szeged: Universitas szegediensis & JATEPress (Studia Uralo-Altaica 33).

Róna-Tas, András. 2016. Khitan studies I. The graphs of the Khitan small script 1. General remarks, dotted graphs, numerals. *Acta Orientalia Academiae Scientiarum Hungaricae* 69/2, 117–138. https://doi.org/10.1556/062.2016.69.2.1

Róna-Tas, András. 2017. Khitan studies I. The graphs of the Khitan small script 2. The vowels. *Acta Orientalia Academiae Scientiarum Hungaricae* 70/2, 135–188.

Róna-Tas, András & Árpád Berta 2011. *West Old Turkic. Turkic Loanwords in Hungarian*, 1–2 vols. Wiesbaden: Harrassowitz.

Ross, John. 1882. *Korean Speech with Grammar and Vocabulary*. Shanghai-Hongkong-Yokohama: Kelly & Walsh.

Rozycki, William. 1978. *A comparative phonology of Dagur and written Mongol*. Bloomington: M.A. Thesis.

Rozycki, William. 1981/1997. *A reverse index of Manchu*. Bloomington: Uralic and Altaic series 140 / Richmond, Surrey: Curzon.

Rozycki, William. 1990. A Korean Loanword in Mongol? *Mongolian Studies* 13, 143–151.

Rozycki, William. 1993a. A problem in Proto-Tungus reconstruction: The phoneme **k'-*. *Ural-Altaische Jahrbücher* 12, 203–212.

Rozycki, William. 1993b. The origin of the word silk. *Asian Culture Quarterly* 21/1, 67–74.

Rozycki, William. 1994a. *Mongol Elements in Manchu*. Bloomington: Indiana University (Uralic and Altaic Series, 157).

Rozycki, William. 1994b. Primary **h-* in Mongol: the Evidence Considered. *Central Asiatic Journal* 38/1, 71–79.

Rozycki, William. 1996a. *Concise Mongol-English and English-Mongol dictionary*. Bloomington: Mongolia Society.

Rozycki, William. 1996b. Mongol *kilgasun* 'horse hair' ~ proto-Tungus **k'inga* 'animal hair'. In: *Proceedings of the 38th Permanent International Altaistic Conference* (*PIAC*) {Kawasaki, Japan: August 7–12, 1995}. Wiesbaden: Harrassowitz, 291–197.

Rozycki, William. 2001a. *John Krueger Bibliography*. Bloomington (Indiana): Eurolingua.

Rozycki, William. 2001b. Manchu *misun* ~ Japanese *miso*. In: *Proceedings of the 40th Permanent International Altaistic Conference* (*PIAC*). Bloomington, Indiana: Indiana University (Uralic and Altaic Series, vol. 168), 236–245.

Rozycki, William. 2003. When did the Japanese language come to Japan? In: *Nihongo keitouron'no genzai / Perspectives on the Origins of the Japanese Language*, ed. by T. Osada & A. Vovin. Kyoto: International Research Center for Japanese Studies (Nichibunken Japanese Studies Series, No. 31), 451–460.

Rozycki, William. 2006. Review of Robbeets, Martine I.: Is Japanese Related to Korean, Tungusic, Mongolic, and Turkic? (2005). *Mongolian Studies* 28, 114–115.

RR = Sravniteľno-istoričeskaja grammatika tjurkskix jazykov: Regionaľnye rekonstrukcii, red. Ėdgem R. Tenišev. Moskva: Nauka 2002.

Rudnev, A. D. 1908. Opyt klassifikacii mongolov po narečijam. In: *Sravniteľnaja fonetika mongoľskogo piśmennogo jazyka i xalxasko-urginskogo govora*, ed. by G.J. Ramstedt. St.-Petersburg: Imperatorskaja Akademija Nauk, iv-vi.

Rudnev, A. D. 1911. *Materialy po govoram Vostočnoj Mongolii*. St.-Petersburg: Fakuľtet Vostočnyx jazykov Imperatorskogo St.-Petersburskogo universiteta.

Rybatzki, Volker. 1994. Bemerkungen zur türkischen und mongolischen Metallterminologie. *Studia Orientalia* 73, 194–251.

Rybatzki, Volker. 1999. Turkic words for 'steel' and 'cast iron'. *Turkic Languages* 3, 56–86.

Rybatzki, Volker. 2002. Die tungusische Metallterminologie. *Studia Etymologica Cracoviensia* 7, 89–126

Rybatzki, Volker. 2003a. Middle Mongol. In: *The Mongolic Languages*, ed. by Juha Janhunen. London – New York: Routledge, 57–82.

Rybatzki, Volker. 2003b. Intra-Mongolic Taxonomy. In: *The Mongolic Languages*, ed. by Juha Janhunen. London – New York: Routledge, 364–390.

Ryer, André Du. 1630 (2nd ed. 1633). *Rudimenta Grammaticis linguae Turcicae*, *quibus eius praecipuae difficultates ... explanantur*. Paris: Vitray.
<http://www.issendai.com/16thcenturyistanbul/resources/dictionaries-grammars-and-translation-tools/>

Sa, Xirong. 1981. *Jianming hanyu elunchunyu duizhao duben* [Concise Chinese-Oroqen contrastive reader]. Beijing: Minzu chubanshe.

Sammallahti, Pekka. 1988. Historical Phonology of the Uralic Languages. In: D. Sinor (ed.), *The Uralic Languages*. Leiden: Brill, 478–554.

Samojlovič, A. 1922. *Nekotorye dopolnenija k klassifikacii tureckix jazykov*. Petrograd: Petrogradskij Institut živyx jazykov.
<https://xn--90ax2c.xn--p1ai/catalog/000200_000018_RU_NLR_INFOCOMM15_1000117889/>

Sanzheyev, Garma D. 1973. *The modern Mongolian language*. Moscow: Nauka.
Sanžeev, Garma D. 1952. Mongoľskie jazyki i dialekty. *Učenye zapiski instituta vostokovedenija* 4, 30–125.
Sanžeev, Garma D. 1953–1963. *Sravniteľnaja grammatika mongoľskix jazykov*, I-II. Moskva: Izdateľstvo Akademii nauk SSSR – Institut vostokovedenija.
Sanžeev, Garma D. 1959. Sovremennyj mongoľskij jazyk. Moskva: Izdateľstvo vostočnoj literatury.
Sanžeev, Garma D. (ed.). 1960. *Russko-mongoľskij slovar*. Moskva: Gosudarstvennoje izdateľstvo inostrannyx i nacionaľnyx slovarej.
Sanžeev, Garma D. et alii. 1962. *Grammatika burjatskogo jazyka – Fonetika i morfologija*. Moskva: Izdateľstvo vostočnoj literatury.
Sanžeev, Garma D. 1964. *Staropiśmennyj mongoľskij jazyk*. Moskva: Nauka.
Sanžeev, Garma D. 1981. Mongoľskie jazyki. In: *Sravniteľno-istoričeskoe izučenie jazykov raznyx semej – Sovremennoe sostojanie i problemy*, ed. by N.Z. Gadžieva, V.K. Žuravlev & V.P. Neroznak. Moskva: Nauka, 235–258, 344–345.
Sanžeev, Garma D. 1983. *Grammatika kalmyckogo jazyka*. Ėlista: Kalmyckoe knižnoe izdatel'stvo.
Sanžeev, Garma D., Orlovskaja, Marija N. & Ševernina, Z.V. 2015. *Ėtimologičeskij slovaŕ mongol'skix jazykov*, Tom I: A-E. Moskva: Rossijskaja akademija nauk – Institut vostokovedenija.
Sanžeev, Garma D., Orlovskaja, Marija N. & Ševernina, Z.V. 2016. *Ėtimologičeskij slovaŕ mongol'skix jazykov*, Tom II: G-P. Moskva: Rossijskaja akademija nauk – Institut vostokovedenija.
Sanžeev, Garma D., Orlovskaja, Marija N. & Ševernina, Z.V. 2018. *Ėtimologičeskij slovaŕ mongol'skix jazykov*, Tom III: Q-Z. Moskva: Rossijskaja akademija nauk – Institut vostokovedenija.
Sárközi, Alice. 2004. *Classical Mongolian*. Munich: Lincom Europa.
Sasse, Werner. 1976. *Das Glossar Koryŏ-pangŏn im Kyerim-yusa. Studien zur Entschlüsselung eines chinesischen Glossars mittelkoreanischer Wörter*. Wiesbaden: Harrassowitz.
Sauvageot, Aurelien. 1928. Sur un nom de nombre commun aux langues samoyedes, tongous, mongol. *Revue des études hongroises* 6, 52–61.
Scharlipp, Wolfgang-Ekkehard. 1994. *Introduction to the Old Turkish Runic Inscriptions*. Nicosia: University of Cyprus.
Schiefner, Anton. 1872. Über Baron Gerhard von Maydell's jukagirische Sprachproben von A. Schiefner. *Bulletin de l'Académie impériale des sciences*, T. 17, 86–103.
Schindler, Jochem. 1966. Zur japanisch-altaischen Verwandtschaftshypothese. *Beiträge zur Japanologie* 3/1, 55–79.
Schmid, Wolfgang J. 1989. *Wort und Zahl. Sprachwissenschaftliche Betrachtungen der Kardinalzahlen*. (Abhandlungen der Akadamie der Wissenschaften und der Literatur, Geistes– und sozialwissenschaftlichen Klasse, Jg. 1989, Nr. 8.) Wiesbaden-Stuttgart: Steiner.
Schmidt, Isaac Jacob. 1829. *Geschichte der Ost-Mongolen und ihres Fürstenhause*. St. Petersburg: Gretsch –Leipzig: Cnobloch.
Schmidt, Isaac Jacob. 1831. *Grammatik der mongolischen Sprache*. St. Petersburg: Kaiserliche Akademie der Wissenschaften – Leipzig: Cnobloch.

Schmidt, Isaac Jacob. 1835. *Mongolisch-deutsch-russisches Wörterbuch*, *nebst einem deutschen und einem russischen Wortregister*. St. Petersburg: Kaiserliche Akademie der Wissenschaften von Graeff & Glasunov – Leipzig: Voss.

Schmidt, Paul. 1915. Ėtnografija Dal'njago Vostoka. In *Vivat Academia*. Vladivostok, 30–31; reprint: C. Naeher (ed.), P. Schmidt (†) – Ėtnografija Dal'njago Vostoka, *Zentralasiatische Studien* 29 (1999), 137–141.

Schmidt, Peter P. 1923a. The Language of the Negidals. *Acta Universitatis Latviensis* 5, 3–38.

Schmidt, Peter P. 1923b. The Language of the Olchas. *Acta Universitatis Latviensis* 8, 229–288.

Schmidt, Peter P. 1928a. The language of the Oroches. *Acta Universitatis Latviensis* 17, 17–62.

Schmidt, Peter. 1928b. The Language of the Samagirs. *Acta Universitatis Latviensis* 19, 219–249.

Schmidt, Peter. 1933. Altaische Zahlwörter. *Mémoires de la Société Finno-Ougrienne* 67, 364–368.

Schmidt, Wilhelm. 1899. Die sprachliche Verhältnisse Oceaniens (Melanesiens, Polynesiens, Mikronesiens uns Indonesiens) in ihrer Bedeutung für die Ethnologie. *Mitteilungen der anthropologischen Gesellschaft* 29, 245–258.

Schmitt, Rüdiger. 1989. Black Sea. In: *Encyclopedia Iranica*, ed. by Ehsan Yarshater. London: Routledge and Kegan Paul Vol. IV, Fasc. 3, 310–313. <http://www.iranicaonline.org/articles/black-sea>

Schönig, Claus. 1995[1996]. Bemerkungen zu den "altaischen" Personalpronomina. *Türk Dilleri Araştırmaları* 5, 33–64.

Schönig, Claus. 1997–1998. A new attempt to classify the Turkic languages, I-III. In: *Turkic Languages* 1.1, 117–133; 1.2, 262–277; 2.1, 130–151.

Schönig, Claus. 2000. *Mongolische Lehnwörter im Westoghusischen*. Wiesbaden: Harrassowitz (Turkologica 47).

Schönig, Claus. 2003. Turko-Mongolic Relations. In: *The Mongolic Languages*, edited by Juha Janhunen, Routledge, 403–419.

Schönig, Claus. 2005. Türkisch-mongolische Sprachbeziehungen – Versuch einer Zwischenbilanz. *Ural-Altaische Jahrbücher*, N.F. 19, 131–166.

Schott, Wilhelm. 1836. *Versuch über die Tatarischen Sprachen.* Berlin: Veit & Comp.

Schott, Wilhelm. 1841. *De lingua Tschuwaschorum*. Berolini: Veitii et socii sumptibus. <https://download.digitale-sammlungen.de/pdf/1547486675bsb10850307.pdf>

Schott, Wilhelm. 1843a. Etwas über die tschuwasischen. *Archiv für wissenschaftliche kunde von Russland*, 1843, 115–120.

Schott, Wilhelm. 1843b. Über die jakutische Sprache. *Archiv für wissenschaftliche kunde von Russland*, 1843, 333–342.

Schott, Wilhelm. 1849. *Über das Alta'ische oder Finnisch-Tatarische Sprachen-Geschlecht*. Berlin: Reimer. <https://opacplus.bsb-muenchen.de/Vta2/bsb10522434/bsb:BV021113492?page=7>

Schott, Wilhelm. 1853. *Das Zahlwort in der tschudischen Sprachenclasse, wie auch im türkischen, tungusischen und mongolischen*. Berlin: Dümmler.

Schott, Wilhelm. 1860. Altajsche Studien oder Untersuchungen auf dem Gebiete der Altai-Sprachen, I. *Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin* 1859, Phil.-hist. Kl., 587–621.

Schott, Wilhelm. 1862. Altajsche Studien II. *Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin* 1861, Phil.-hist. Kl., 153–176.

Schott, Wilhelm. 1867. Altajsche Studien (III) oder Untersuchungen auf dem Gebiete der tatarischen (turanischen) Sprachen. *Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin* 1866, Phil.-hist. Kl., 89–153.

Schott, Wilhelm. 1870. Altajsche Studien IV: Die fürwortlichen Anhänge in den tungusischen Sprachen und im Mongolischen. *Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin* 1869, Phil.-hist. Kl., 267–307.

Schott, Wilhelm. 1874. Zur Uigurenfrage. Erste Abteilung. *Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin* 1873, Phil.-hist. Kl., 101–121.

Schott, Wilhelm. 1876a. Zur Uigurenfrage. Zweite Abteilung. *Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin* 1875, Phil.-hist. Kl., 27–57

Schrenck, Leopold von. 1883. *Ob inorodcax Amurskogo kraja*, I. St. Petersburg: Imperatorskaja Akademija Nauk.

Schuessler, Axel. 2007. *ABC Etymological Dictionary of Old Chinese*. Honolulu: University of Hawa‘i Press.

Schuessler, Axel. 2009. *A Minimal Old Chinese and Later Han Chinese. A Companion to Grammata Serica Recensa*. Honolulu: University of Hawa‘i Press.

Schulze, Wolfgang M. 2006. A Grammar of Udihe. *Studies in Language* 30/3, 599–616.

Schwarz, Michal. 2010. *Mongolsko*. Praha: Libri.

Schwarz, Michal & Blažek, Václav. 2007. Pavel Poucha (1905–1986). *Linguistica Brunensia. Sborník prací filozofické fakulty brněnské univerzity* A 55, 322–325.

Schwarz, Michal & Blažek, Václav. 2010. Klasifikace a rozšíření mongolských jazyků. *Linguistica brunensia* 58, 11–50.

Schwarz, Michal & Blažek, Václav. 2011. Klasifikace a přehled turkických jazyků. *Linguistica brunensia* 59, 25–59.

Schwarz, Michal & Blažek, Václav. 2012. Tunguzské jazyky – přehled, klasifikace, současný stav [Tungusic Languages – Survey, Classification and Present State]. *Linguistica Brunensia* 60, 147–170.

Schwarz, Michal & Blažek, Václav. 2013. On classification of Mongolian. *Folia Orientalia* 50, 177–214.

Schwarz, Michal & Blažek, Václav. 2014. Anna Vladimirovna Dybo (*4. 6. 1959). *Linguistica Brunensia* 62/1, 103–110.

Schwarz, Michal & Blažek, Václav. 2015. Gerhard Doerfer (*8. 3. 1920 – †27. 12. 2003). Linguistica Brunensia 63/1, 84–94.

Schwarz, Michal & Blažek, Václav. 2017. Jaroslav Vacek (*26. 1. 1943 – †23. 1. 2017). Linguistica Brunensia 65/1, 115–126.

Seaman, Gulielmo (William). 1670. *Grammatica Linguae Turcicae: in quinque partes distributa*. Oxoniae (Oxford): Millington.

Seeley, Christopher. 2000. *A History of Writing in Japan*. Honolulu: University of Hawaii.

Sejdakmatov, Kasımbek. 1988. *Kyrgyz tilinin kyskača etimologijalyk sözdügü*. Frunze: Ilim.

Sem, Lidija I. 1976. *Očerki dialektov nanajskogo jazyka. Bikinskij (ussurisjkij) dialekt*. Leningrad: Nauka.

Serebrennikov, Boris A. 1988. Kriterii vydelenija altajskoj jazykovoj obščnosti. In: *Problemy mongoľskogo jazykoznanija*, red. L.D. Šagdarov. Novosibirsk: Nauka, 33–41.

Serebrennikov, Boris A. & Gadžieva, Nineľ Z. 1979. *Sravniteľno-istoričeskaja grammatika tjurkskix jazykov*. Baku: Maarif.

Sevortjan, E. B., et al. 1974–2003. *Ėtimologičeskij slovaŕ tjurkskix jazykov*, I (glasnye), II (*B*), III (*V*, *G*, *D*) by Ė.V. Sevortjan, Moscow: Nauka 1974, 1978, 1980; IV (*Ǯ*, *Ž*, *J*) by .V. Sevortjan and L. S. Levitskaja, Moscow: Nauka 1989; V (*K*, *Q*), Moscow: Jazyki russkoj kuľtury 1997 & VI (*K*) by L. S. Levitskaja, A. V. Dybo, V. I. Rassadin, Moscow: Indrik 2000; VII (*L*, *M*, *N*, *P*, *S*) by L. S. Levitskaja, G. F. Blagova, A. V. Dybo, D. M. Nasilov, Moscow: Institut jazykoznanija RAN 2003.

SG = Serebrennikov, Boris A. & Gadžieva, Nineľ Z. 1979. *Sravniteľno-istoričeskaja grammatika tjurkskix jazykov*. Baku: Maarif.

Shafer, Robert. 1974. *Introduction to Sino-Tibetan*. Wiesbaden: Harrassowitz.

Shaw, Robert Barkley. 1877. A Grammar of the Language of Eastern Turkistán. *Journal of the Asiatic Society of Bengal* 46/3, 242–368 = Shaw 1878.

Shaw, Robert Barkley. 1878. *A Sketch of the Turki Language as Spoken in Eastern Turkestan* (*Kàshghar and Yarkend*). Calcutta: Lewis (The Baptist Mission Press).

Shaw, Robert Barkley. 1880. *A Sketch of the Turki Language as Spoken in Eastern Turkestan*, Part II: *Vocabulary*. Calcutta: Thomas (The Baptist Mission Press).

Shimoji, Michinori & Pellard, Thomas (eds.). 2010. *An Introduction to Ryukyuan Languages*. Tokyo: Research Institute for Languages and Cultures of Asia and Africa.

Shimunek, Andrew 2011. Review of *The Kitan Language and Script* by Daniel Kane. *Acta Orientalia Academiae Scientiarum Hungaricae* 64/1, 129–135.

Shimunek, Andrew 2014. A new decipherment and linguistic reconstruction of the Kitan-Chinese bilingual inscription of 1134 A.D. *Acta Orientalia Academiae Scientiarum Hungaricae* 67/1, 97–118. https://doi.org/10.1556/AOrient.67.2014.1.5

Shimunek, Andrew. 2018. Early Serbi-Mongolic – Tungusic lexical contact: Jurchen numerals from the 室韋 Shirwi (Shih-wei) in North China. In: *Philology of the Grasslands. Essays in Mongolic, Turkic, and Tungusic Studies*, ed. by Ákos Bertalan Apatóczky & Christopher P. Atwood. Leiden – Boston: Brill (Languages of Asia, Volume 17), 331–346.

Shiratori Kurakichi. 1897. Nihon no kogo to Chōsengo to no hikaku. *Kokugakuin zasshi* 4, 4–12.

Shiratori Kurakichi. 1914–1916 / 1970 (reed.). Chōsengo to Ural-Altai-go to no hikaku kenkyu. In: *Shiratori Kurakichi zenshū,* 3. Tokyo: Iwanami Shoten.

Shiratori, Kurakichi. 1937. The Japanese numerals. *Memoirs of the Research Department of the Toyo Bunko* (The Oriental Library) 9, 1–78.

Shirokogoroff, S. M. 1944. *A Tungus Dictionary: Tungus-Russian and Russian-Tungus*. (Ed. Shinobu Iwamura). Tokyo: The Minzokugaku Kyokai.

Siebold, Philipp Franz Balthazar von. 1826. Epitome linguae japonice. *Verhandelingen der Bataviaasch Genootschap van Kunsten en Wetenschappen* 11, 63–136.

Siebold, Philipp Franz Balthazar von. 1832. Verhandeling over de Afkomst der Japaners. *Verhandelingen der Bataviaasch Genootschap van Kunsten en Wetenschappen* 13, 183–275.

Sinor, Denis. 1952a. On Some Ural-Altaic Plural Suffixes. *Asia Major*, New Series, vol. II, Part 2, 203–230.

<http://www2.ihp.sinica.edu.tw/file/1364pLIrxtb.pdf>

Sinor, Denis. 1952b. Langues mongoles. In: *Les Langues du monde*, ed. by Antoine Meillet & Marcel Cohen. Paris: Centre national de la recherche scientifique, 369–384.

Sinor, Denis. 1962. Some Altaic names for bovines. *Acta Orientalia Academiae Scientiarum Hungaricae* 15, 315–324.

Sinor, Denis. 1982. The Legendary Origin of the Turks. In: *Folklorica: Festschrift for Felix J. Oinas*, edited by Egle Victoria Zygas & Peter Voorheis. Bloomington: Indiana University (Uralic & Altaic Series, Vol. 141), 223–257.

Sinor, Denis. 1990. *Essays in Comparative Altaic Linguistics*. Bloomington: Research Institute for Inner Asian Studies.

Siqin, Chaoketu. 1999. *Kangjiayu Yanjiu* ["A study of Kangjia"]. Shanghai: Shanghai yuan dong chu ban she [Shanghai Far East Publishers].

SKE = Ramstedt, Gustaf J. 1949. *Studies in Korean Etymology*. Helsinki: Suomalais-ugrilainen seura. Mémoires de la Société Finno-Ougrienne, Vol. 95.

Skribnik, Elena. 2003. Buryat. In: *The Mongolic Languages*, ed. by Juha Janhunen. London: Routledge, 102–128.

Slater, Keith W. 2003a. *Grammar of Mangghuer: A Mongolic Language of China's Qinghai-Gansu Sprachbund*. London: Curzon.

Slater, Keith W. 2003b. Mangghuer. In: Janhunen, Juha (ed.). *The Mongolic Languages*. London: Routledge, 307–324.

Smirnov, Parman A. 1857. *Kratkij russko-kalmyckij slovarʹ*. Kazań: Tipografija universiteta.

Sohn, Ho-min. 1980. The State of the Art in the Historical-Comparative Studies of Japanese and Korean. *Korean Studies* 4, 29–50.

Sotavalta, Arvo A. & Halén, Harry. 1978. *Westlamutische Materialien*. Helsinki: Suomalais-ugrilaisen seuran toimituksia 168.

Spear, Richard L. 1975. *Diego Collado's grammar of the Japanese language.* Lawrence: University of Kansas, Center for East Asian Studies (International studies, East Asian series research publication – 9).
<http://www.gutenberg.org/files/21197/21197–h/21197–h.htm>

Sravniteľno-istoričeskaja grammatika tjurkskix jazykov: Tjurkskij jazyk-osnova; Kartina mira pratjurkskogo ėtnosa po dannym jazyka, red. Ė.R. Tenišev & A.V. Dybo. Moskva: Nauka 2006.

Srba, Ondřej. 2012. Nápis na tzv. Čingisově kameni (Činggis-ün čilaɣun-u bičig). *Linguistica Brunensia* 60, 171–182,

Srba, Ondřej & Schwarz, Michal. 2015. Dějiny Mongolska. Nakladatelství Lidové noviny.

Stachowski, Kamil. 2012. W. Kotwicz's unpublished study *Les voyelles longues dans les langues altaiques* (1938). *Studia Linguistica Universitatis Iagellonicae Cracoviensis* 129, 245–315.

Stachowski, Marek. 1993. *Dolganischer Wortschatz. Lexica dolganica*. Krakow: Polska Akademia Nauk.

Stachowski, Marek. 1998a. A note on Proto-Turkic **Cč, *čC* clusters and Proto-Altaic sources of *š* and *č* in Turkic languages. *Folia Orientalia* 34, 149–158.

Stachowski, Marek. 1998b. Zwei alttürkische Konsonantenwechsel (*š* ~ *s*, *š* ~ *l*), die Runik und die Altaistik. In: Bahşı Ögdisi [Fs. K. Röhrborn], ed. by Laut J. P. & Ölmez M. Freiburg – İstanbul, 391–399.

Stachowski, Marek. 1999. Korean-Turkic Studies. In: *Collectanea linguistica in honorem Casimiri Polanski*, ed. by Brzezina, M. & Kurek, H. Kraków, 231–241.

Stachowski, Marek. 2005. Turkologische Anmerkungen zum Altaischen Etymologischen Wörterbuch. *Studia Etymologica Cracoviensia* 10, 227–246.

Stachowski, Marek. 2008. Turkologia, uralistyka, syberystyka, czyli rzut oka na historię językoznawstwa porównawczego. *Studia Linguistica Universitatis Iagellonicae Cracoviensis* 125, 167–177.

Stachowski, Marek. 2011. Teoria nostratyczna i szkoła moskiewska. *LingVaria* 6/1, 241–274.

Stachowski, Marek. 2012. Teoria ałtajska. *LingVaria* 7/2, 239–263.

Stachowski, Marek & Menz, Astrid. 1998. Yakut. In: *TL*, 417–433.

Starikov, V. S. 1982. Prozaičeskie i stixotvornye teksty malogo kidanskogo pis'ma XI-XII vv. In: Ju.V. Knorozov (ed.), *Zabytye sistemy pišma.* Moscow: Nauka, 99–210.

Starostin, Georgij. 2015. *K istokam jazykogo raznoobrazija.* Moskva: Izdateľskij dom Delo.

Starostin, Sergej A. 1972. K probleme rekonstrukcii prajaponskoj fonologičeskoj sistemy. In: *Konferencija po sravniteľno-istoričeskoj grammatike indoevropejskix jazykov*. Moskva: Nauka, 72–74.

Starostin, Sergej A. 1975. K voprosu o rekonstrukcii prajaponskoj fonologičeskoj sistemy. In: *Očerki po fonologii vostočnyx jazykov*. Moskva: Nauka, 271–280.

Starostin, Sergej A. 1986. Problema genetičeskoj obščnosti altajskix jazykov. In: *Istoriko-kuľturnye kontakty narodov altajskoj jazykovoj obščnosti: Tezisy dokladov XXIX sessii PIAC*, II: *Lingvistika* (Taškent, IX 1986). Moskva: Nauka (Institut vostokovedenija – Akademija Nauk SSSR), 104–112.

Starostin, Sergej A. 1990. O japono-korejskix akcentnyx sootvetstvijax. In: *Sravniteľno-istoričeskoe jazykoznanie na sovremennom ėtape*. Moskva: Institut slavjanovedenija i balkanistiki, 44–47.

Starostin, Sergej A. 1991. *Altajskaja problema i proisxoždenie japonskogo jazyka*. Moskva: Nauka.

Starostin, Sergej A. 1995. On vowel length and prosody in Altaic languages. *Moskovskij lingvističeskij žurnal* 1, 191–235.

Starostin, Sergej A. 1997. On the 'consonant splits' in Japanese. In: *Indo-European, Nostratic, and Beyond. Festschrift for Vitalij V. Shevoroshkin*, ed. by I. Hegedűs et al. Washington: Institute for the Study of Man (Journal of Indo-European Studies, Monograph Nr. 22), 326–341.

Starostin, Sergej A. 2000. The phonological system of Proto-Altaic. In: *Problemy izučenija daľnego rodstva jazykov na rubeže tretjego tysjačiletija*, ed. G.S. & S.A. Starostin. Moskva: Rossijskij gosudarstvennyj gumanitarnyj univerzitet, 222–224.

Starostin, Sergei. 2005. Response to Stefan Georg's Review of the Etymological Dictionary of the Altaic Languages. *Diachronica* 22/2, 451–454. https://doi.org/10.1075/dia.22.2.09sta

Starostin, *ChEDb* = Starostin, Sergej A. 2005. *Chinese Etymological Database*. http://starling.rinet.ru/cgi-bin/query.cgi?root=config&morpho=0&basename=\data\china\bigchina

Stary, Giovanni. 1990a. The meaning of the word 'Manchu': A new solution to an old problem. *Central Asiatic Journal* 34, 109–119.

Stary, Giovanni. 1990b. *Taschenwörterbuch Sibemandschurisch-Deutsch*. Wiesbaden: Harrassowitz.

Steingass, Francis Joseph. 1892. *A Comprehensive Persian-English dictionary, including the Arabic words and phrases to be met with in Persian literature*. London: Routledge & Paul.

Stoljarov, Aleksandr V. 1994. Nanajskij jazyk. In: *Krasnaja kniga jazykov narodov Rossii: Ėnciklopedičeskij slovaŕ-spravočnik*. Moskva: Academia.

Strahlenberg, Philipp-Johann. 1730. *Das Nord– und Östliche Theil von Europa und Asien,* Stockholm: Author, cited after the English translation: *An Historico-geographical Description of the North and Eastern Parts of Europe and Asia*, London 1738.

Street, John C. 1959. *Structure of Kalmyk*. American Council of Learned Societies Research and Studies in Uralic and Altaic Languages Project.

Street, John C. 1962. Review of Poppe 1960. *Language* 38/1, 92–98.

Street, John C. 1963. *Khalkha Structure*. Bloomington: Indiana University Press (Indiana University Publications, Uralic and Altaic Series, 24).

Street, John C. 1974. *On the lexicon of proto-Altaic: a partial index to reconstructions*. Madison (Wisconsin): The author.

Street, John C. 1978. *Altaic Elements in Old Japanese*, Part II. Wisconsin: Author.

Street, John C. 1979. Proto-Altaic **ɟa*. In: *Proceedings of the VIth International Symposium* (Sept.5–9, 1978). Seoul: National Academy of Sciences, 51–80.

Street, John C. 1980a. Proto-Altaic **-l(V)b-* ~ Turkic **š*. *Central Asiatic Journal* 24/3–4, 285–303.

Street, John C. 1980b. Japanese and the Altaic languages [Review of Karl Menges: *Altjische Studien*, II: *Japanisch und Altajisch*, 1975]. *Orientalistische Literaturzeitung* 75/2, 101–105.

Street, John C. 1981. Remarks on the phonological comparison of Japanese with Altaic. *Bulletin of the International Institute for Linguistic Sciences* [Kyôto Sangyô University] 2/4, 293–307.

Street, John C. 1983. Review of James Patrie's *The Genetic Relationship of the Ainu Language*. *Journal of the Association of Teachers of Japanese* 17/2, 192–204. https://doi.org/10.2307/489399

Street, John C. 1984. On the Mongolian alternation *bi/min-/nama-* 'I'. *Mongolian Studies* 8, 65–87.

Street, John C. 1985. Japanese reflexes of the Proto-Altaic lateral. *Journal of the American Oriental Society* 105/4, 637–651. https://doi.org/10.2307/602725

Street, John C. & Miller, Roy Andrew. 1975. *Altaic Elements in Old Japanese*, Part I. Wisconsin: Authors.

Sun Zhu. 1985. *Mengguyu wenji*. Xining: Qinghai renmin chubansche.

Sun Zhu et al. 1990. *Menggu yuzu yuyan cidian*. Xining: Qinghai renmin chubanshe.

Sunik, Orest P. 1959. Tunguso-mańčžurskie jazyki. In: *Mladopis'mennye jazyki narodov SSSR*. Moskva-Leningrad: Izdateľstvo Akademii nauk SSSR, 331–340.

Sunik, Orest P. 1962. *Glagol v tunguso-mańčžurskix jazykax*. Moskva-Leningrad.

Sunik, Orest P. 1968. Tunguso-mańčžurskie jazyki. In: *Jazyki narodov SSSR: Mongoľskie, tunguso-mańčžurskie i paleoaziatskie jazyki*, ed. P.Ja. Skorik et alii. Leningrad: Nauka, 53–67.

Sunik, Orest P. 1968a. Uľčskij jazyk. In: JN V, 149–171.

Sunik, Orest P. 1968b. Udėgejskij jazyk. In: JN V, 210–232.

Sunik, Orest P. 1971a. *Problema obščnosti altajskix jazykov*. In: *Problema obščnosti altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 7–21.

Sunik, Orest P. 1971b. K voprosu o vozvratnyx mestoimenijax v altajskix jazykax. In: *Problema obščnosti altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 263–278.

Sunik, Orest P. 1971c. O glagolax 'byť' i 'stať' v altajskix jazykax. In: *Problema obščnosti altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 386–396.

Sunik, Orest P. 1978a. O galgolax 'byť' i 'stať' v altajskix jazykax i ix morfologičeskie derivaty. In: *Očerki sravniteľnoj morfologii altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 178–196.

Sunik, Orest P. 1978b. Mestomenija 'sam' / 'svoj' i ix morfologičeskie derivaty v altajskix jazykax. In: *Očerki sravniteľnoj morfologii altajskix jazykov*, ed. by O.P. Sunik. Leningrad: Nauka, 232–268.

Sunik, Orest P. 1982. *Suščestviteľnoe v tunguso-mańčžurskix jazykax*. Leningrad: Nauka.

Sunik, Orest P. 1985. *Uľčskij jazyk. Issledovanija i materialy*. Leningrad: Nauka.

Sunik, Orest P. 1986. *Imja suščestviteľnoe v tunguso-mańčžurskix jazykax*. Leningrad: Nauka.

Svantesson, Jan-Olaf. 2000. Mongolic vowel shifts and the classification of the Mongolic languages. *Altai Hakpo* 10, 193–207.

Svantesson, Jan-Olof. 2003. Khalkha. In: Janhunen, Juha (ed.). *The Mongolic Languages*. London: Routledge, 154–176.

Sy = Syromjatnikov, Nikolaj A. 1983. *Klassičeskij japonskij jazyk*. Moskva: Nauka.

Syromiatnikov, N. A. 1981. *The Ancient Japanese Language*. Moscow: Nauka.

Syromjatnikov, Nikolaj A. 1983. *Klassičeskij japonskij jazyk*. Moskva: Nauka.

Š = Ščerbak, Aleksandr M. 1977. *Očerki po sravniteľnoj morfologii tjurkskix jazykov (imja)*. Leningrad: Nauka.

Ščerbak, Aleksandr M. 1959. Ob altajskoj gipoteze v jazykoznanii. *Voprosy jazykoznanija* 1959/5, 51–63.

Ščerbak, Aleksandr M. 1961. Nazvanija domašnix i dikix životnyx v tjurkskix jazykax. In: *Istoričeskoe razvitie leksiki tjurkskix jazykov*, ed. by E.I. Ubrjatova. Moskva: Institut jazykoznanija AN SSSR, 82–172.

Ščerbak, Aleksandr M. 1963. O metodike issledovanija jazykovyx parallelej (v svjazi s altajskoj gipotezoj). In: *Doklady delegacii SSSR na XXV Meždunarodnom kongresse vostokovedov* (Moskva 1960), Tom III, ed. by B.B. Gafurov. Moskva: Izdateľstvo vostočnoj literatury, 271–277.

Ščerbak, Aleksandr M. 1966. O xaraktere leksičeskix vzaimosvjazej tjurkskix, mongoľskix i tunguso-mańčžurskix jazykov. *Voprosy jazykoznanija* 1966/3, 21–35.

Ščerbak, Aleksandr M. 1970. *Sravniteľnaja fonetika tjurkskix jazykov*. Leningrad: Nauka.

Ščerbak, Aleksandr M. 1977. *Očerki po sravniteľnoj morfologii tjurkskix jazykov (imja)*. Leningrad: Nauka.

Ščerbak, Aleksandr M. 1981. *Očerki po sravniteľnoj morfologii tjurkskix jazykov (glagol)*. Leningrad: Nauka.

Ščerbak, Aleksandr M. 1986. Tjurko-mongoľskie jazykovye svjazi. *Voprosy jazykoznanija* 1986/4, 47–59.

Ščerbak, Aleksandr M. 1987a. *Očerki po sravniteľnoj morfologii tjurkskix jazykov (narečie, služebnye časti reči, izobraziteľnye slova)*. Leningrad: Nauka.

Ščerbak, Aleksandr M. 1987b. Problema rotacizma i perspektivy daľnejšego izučenija tjurkskomongoľskix jazykovyx jazykovyx svjazej. *Sovetskaja tjurkologija* 1987/3, 3–9.

Ščerbak {Şçerbak}, Aleksandr M. 1987[1992]. Zetasizm-Rotasizm Meselesi ve Türkçe İle Moğolca Arasındaki Münasebetlere Dair Bazı Düşünceler. *Türk Dilleri Araştırmaları Yıllığı belleten* 1987 [1992], 281–288.

Ščerbak, Aleksandr M. 1989. K voprosu ob otdalennyx svjazjax tjurkskix jazykov. In: *Aktualľnye voprosy sravniteľnogo jazykoznanija*. Leningrad: Nauka, 150–161.

Ščerbak, Aleksandr M. 1994. *Vvedenie v sravniteľnoe izučenie tjurkskix jazykov*. Sankt-Peterburg: Institut lingvističeskix issledovanij RAN.

Ščerbak, Aleksandr M. 1997. *Rannie tjurksko-mongoľskie jazykovye svjazi (VIII-XIV vv.)*. Sankt-Peterburg: Institut lingvističeskix issledovanij RAN.

Ščerbak, Aleksandr M. 2001. *Tjurkskaja runika: proisxoždenie drevnejšej piśmennosti tjurok, granicy ee rasprostranenija i osobennosti ispoľzovanija*. Sankt-Peterburg: Nauka.

Ščerbak, Aleksandr M. 2005. *Tjurko-mongoľskie jazykovye kontakty v istorii mongoľskix jazykov*. Sankt-Peterburg: Institut lingvističeskix issledovanij RAN.

Šternberg, L.Ja. 1933. *Giljaki, oroči, goľdy, negidalcy, ajny*. Xabarovsk: Daľgiz.

Tailleur, Olivier Guy. 1962. Le dialecte tchouvane du youkaghir. Ural-Altaische Jahrbücher 34, 55–99.

Tatarincev, B.I. 2000–2008. *Ėtimologičeskij slovaŕ tuvinskogo jazyka*, I (2000), II (2002), III (2004), IV (2008). Novosibirsk: Nauka / Tuvinskij institut gumanitarnyx issledovanij.

Tekin, Talat. 1968. *A Grammar of Orkhon Turkic*. The Hague: Mouton.

Tekin, Talât. 1969. Zetacism and Sigmatism in Proto-Turkic. *Acta Orientalia Academiae Scientiarum Hungaricae*, 22, 51–80.

Tekin, Talât. 1975. Further Evidence for 'Zetacism" and "Sigmatism'. In: *Research in Altaic Languages*, ed. by Louis Ligeti. Budapest: Akadémiai Kiadó, 275–284),

Tekin, Talât. 1979. Once More Zetacism and Sigmatism. *Central Asiatic Journal* 23, 118–137.

Tekin, Talât. 1986. Zetacism and Sigmatism: Main Pillars of the Altaic Theory. *Central Asiatic Journal* 30, 141–160.

Tekin, Talât. 1991. New Examples of Zetacism. *Türk Dilleri Araştırmaları* 1991, 145–150.

Tekin, Talât. 1996. Altaic etymologies, I. *International Journal of Central Asian Studies* 1, 245–268.

Tekin, Talat. 2003. *Orhon Türkçesi Grameri*. Istanbul: TDAD 9. 2. Baskı.

Tenišev, Ėdgem R. & Todaeva, Buljaš X. 1966. *Jazyk želtyx ujgurov*. Moskva: Akademia Nauk SSSR (Jazyki Narodov Azii i Afriki).

Tenišev, Ėdgem Raximovič. 1978. Tjurkskie "odin", "dva", "tri". In: *Tjurkologičeskij sbornik* 1974. Moskva: Nauka.

Tenišev, Ėdgem Raximovič (ed.). 1984/1986/1988/1997+2001. *Sravnitel'no-istoričeskaja grammatika tjurkskix jazykov. Fonetika/Sintaks/Morfologija/Leksika*. Moskva: Nauka.

Tenišev, Ėdgem Raximovič. 1997. Saryg-jugurskij jazyk. In: Ė. R. Tenišev (ed.), *Tjurkskie jazyki*, Moscow: Indrik, 345–354.

Tenišev, Ėdgem Raximovič (ed.). 2002. *Sravniteľno-istoričeskaja grammatika tjurkskix jazykov: Regionaľnye rekonstrukcii*. Moskva: Nauka.

Tenišev, Ėdgem R. & Dybo, Anna V. (eds.). 2006. *Sravniteľno-istoričeskaja grammatika tjurkskix jazykov: Tjurkskij jazyk-osnova; Kartina mira pratjurkskogo ėtnosa po dannym jazyka*. Moskva: Nauka.

Thalbitzer, William. 1908. The Eskimo numerals. *Journal de la Société Finno-Ougrienne* 25.2, 1–25.

Thévenot, Melchisédech. 1663–1672. *Essais de la grammaire mongole*. Paris.

Thomsen, Vilhelm. 1893. Dechiffrement des inscriptions de l'Orkhon et de l'Ienissei. Notice preliminaire. *Bulletin de l'Academie Royale du Danemark* 1893, 285–299.

Thomsen, Vilhelm Ludvig Peter. 1896. *Inscriptions de l' Orkhon déchiffrées*. Helsingfors: Imprimerie de la Société de Littérature Finnoise (Suomalais-ugrilaisen seuran toimituksia / Mémoires de la Société Finno-Ougrienne, 5).

Thomsen, Vilhelm. 1916. *Turcica*, *étude concernant l'interpretation des inscriptions turques de la Mongolie et de la Sibérie*. Helsingfors: *Mémoires de la Société Finno-Ougrienne* 37, 1–107.

Thomsen, Vilhelm (in translation of E. Denison Ross). 1930a. The Orkhon Inscriptions: Being a Translation of Professor Vilhelm Thomsen's Final Danish Rendering. *Bulletin of the School of Oriental Studies, University of London*, Vol. 5, No. 4, 861–876.

Thomsen, Vilhelm (in translation of E. Denison Ross). 1930b. The Tonyukuk Inscription: "Being a Translation of Professor Vilhelm Thomsen's Final Danish Rendering". *Bulletin of the School of Oriental Studies, University of London*, Vol. 6, No. 1, 37–43.

Tietze, Andreas. 2002–2010. *Tarihi ve etimolojik Türkiye Türkçesi lugatı / Sprachgeschichtliches und etymologisches Wörterbuch des Türkei-Türkischen*, vol. 1: A–E (2002), vol. 2: F–J (2010). İstanbul: Simurg.

TJ = *Jazyka mira: Tjurkskie jazyki*, red. Ėdgem R. Tenišev. Moskva: Indrik 1997.

TL = *The Turkic Languages*, ed. by Lars Johanson & Éva Csató. London–New York: Routledge 1998.

TMEN = Gerhard Doerfer: *Türkische und mongolische Elemente im Neupersischen, unter besonderer Berücksichtigung älterer neupersischer Geschichtsquellen, vor allem der Mongolen– und Timuridenzeit*, Bd. I-IV. Wiesbaden: Steiner (Akademie der Wissenschaften und der Literatur in Mainz. Veröffentlichungen der Orientalischen Kommission, Bd. XVI, XIX, XX, XXI) 1963, 1965, 1967, 1975.

TMS = *Sravniteľnyj slovaŕ tunguso-mańčžurskix jazykov*, I-II, ed. by Vera I. Cincius. Leningrad: Nauka 1975–1977.

Todaeva, B.H. 1959. Über die Sprache der Tung-hsiang. *Acta Orientalia Academiae Scientiarum Hungaricae* 9, 273–310.

Todaeva, Buljaš X. 1961. *Dunsjanskij jazyk*. Moskva: Izdateľstvo vostočnoj literatury.

Todaeva, B.X. 1963. Einige Besonderheiten der Paoan-Sprache. *Acta Orientalia Academiae Scientiarum Hungaricae* 16, 175–197.

Todaeva, Buljaš X. 1966. Baoan'skij jazyk. Moskva: Nauka.

Todaeva, Buljaš X. 1968. *Kalmyckij jazyk*. In: *JN* V, 34–52.

Todajeva, Buljaš X. 1973. *Mongorskij jazyk*. Moskva: Nauka.

Todajeva, Buljaš X. 1981. *Jazyk Mongolov Vnutrennej Mongolii*. Moskva: Nauka.

Todaeva, Buljaš X. 1986. *Dagurskij jazyk*. Moskva: Nauka.

Toh, Soo Hee. 2013. On the Language of the Former Period of Baekje. *Korean within Altaic and Altaic language within Korean*. Seoul: Asian Cultural Studies Research Institute, Gachon University, 121–140.

Toivonen, Y.H. 1951. Gustaf John Ramstedt. *Journal de la Société Finno-Ougrienne* 55.1, 3–21.

Tokmašev, M.G. & D.M. 2008. *Teleŋet tili / Teleutskij jazyk*. Kemerovo: Kuzbas.

Tömörtogo, D. 1978. *A Modern Mongolian-English-Japanese Dictionary*, ed. by S. Ozawa & H. Hasumi. Tôkyô: Kaimei shoin.

Transeurasian Linguistics: Critical Concepts in Linguistics, Vol. I-IV, edited by Martine Robbeets. London – New York: Routledge 2017.

Trojanskij, Aleksandr. 1814. *Kratkaja tatarskaja grammatika v pol'zu učaščagosja junošestva*. St. Peterburg: Imperatorskaya Tipografiya.

Trojanskij, Aleksandr. 1833–1835. *Slovaŕ tatarskago jazyka*, I-II. Kazań.

Tsumagari, Toshiro. 1992. A Basic Vocabulary of Khamnigan and Oluguya Ewenki in Northern Inner Mongolia. *Bulletin of the Institute for the Study of North Eurasian Cultures* 22, 83–103.

Tsumagari, Toshiro. 2003. Dagur. In: Janhunen, Juha (ed.). *The Mongolic Languages*. London: Routledge, 129–153.

Tsumagari, Toshiro. 2009. *A Sketch of Solon Grammar*. Hokkaido University. http://eprints.lib.hokudai.ac.jp/dspace/bitstream/2115/38236/1/01_p1–21.pdf]

Tsung, Linda. 2009. *Minority Languages, Education and Communities in China* (Palgrave Studies in Minority Languages and Communities). Houndmills – New York: Palgrave Maxmillian.

Tsunoda Ryūsaku (transl.) & Goodrich, Luther Carrington (ed.). 1951. *Japan in the Chinese Dynastic Histories: later Han through Ming dynasties*. South Pasadena: P.D. & Ione Perkins

TT = Tenišev, Ėdgem R. – Todaeva, Buljaš X. 1966. *Jazyk želtyx ujgurov* [online]. Moskva: Nauka. http://altaica.ru/LIBRARY/TODAEVA/Jazyk_zheltyh_ujgurov.pdf

Tulisow, Jerzy. 2000. *Język mandżurski*. Warszawa: Dialog (Języki Azjii i Afryki).

Tumaševa, D. G. 1977. *Dialekty sibirskix Tatar*. Izdateľstvo kazańskogo univerziteta.

Tumen, D. et al. 2012. "Dornod Mongol – 2011" arxeologiin xeeriin sudalgaa [Archaeological fieldwork in the Eastern Mongolia in 2011]. *Mongolian Journal of Anthropology, Archaeology and Ethnology*, Vol. 7, No. 1(378). Ulaanbaatar: National University of Mongolia, 1–38.

Tumurdėj, G. & Cybenov, B.D. 2014. *Kratkij dagursko-russkij slovaŕ*. Ulan-Udė: Izdateľstvo BNC SO RAN.

Turkologie, mit Beiträgen von Annemarie von Gabain, Omeljan Pritsak, Nikolaus Poppe, J. Benzing, Karl H. Menges, Ahmet Temir, Zeki Velidi Togan, Franz Taeschner, O. Spies, Ahmed Caferoğlu, Abdulah Battal-Taymas. Nachdruck mit Ergänzungen. Leiden – Köln: Brill 1982 (1st edition 1963). *Handbuch der Orientalistik*, Fünfte Band: Altaistik, Erster Abschnitt: Turkologie.

Tyler, Stephen A. 1968. Dravidian and Uralian: the Lexical Evidence. *Language* 44, 798–812. https://doi.org/10.2307/411899

Ubrjatova, E.I. 1966. Jakutskij jazyk. In: *JN* II, 403–427.

UEW = Uralisches etymologisches Wörterbuch, 1–3, ed. K. Rédei. Budapest: Kiadó 1988–1991.

Ulving, Tor. 1997. *Dictionary of Old and Middle Chinese. Bernhard Karlgren's Grammata Serica Recensa Alphabetically Arranged.* Göteborg: Acta universitatis gothoburgensis.

Underwood, H.G. & H.H. 1925. *An English-Korean Dictionary*, revised by E.W. Koons & Oh Seoung Kun. Seoul.

Unger, J. Marshall. 1990a. Summary report of the Altaic panel. In: *Linguistic Change and Reconstruction Methodology*, ed. by Philip Baldi. Berlin – New York: Mouton de Gruyter, 479–482.

Unger, J. Marshall. 1990b. Japanese and What Other Altaic Languages? In: *Linguistic Change and Reconstruction Methodology*, ed. by Philip Baldi. Berlin – New York: Mouton de Gruyter,

Unger, J. Marshall. 2000. Reconciling Comparative and Internal Reconstruction: The Case of Old Japanese /*ti*, *ri*, *ni*/. *Language* 76/3, 655–681.

Unger, J. Marshall. 2009. *The role of contact in the origins of the Japanese and Korean languages*. Honolulu: University of Hawai'i Press.

Unkrig, W. A., Bleichsteiner., R. Heissig, W. 1941. *Wörterbuch der heutigen mongolischen Sprache*. Wien – Peking: Siebenberg.

V = Vovin, Alexander. 2005–2009. *A Descriptive and Comparative Grammar of Western Old Japanese*. Part 1: *Sources, Script and Phonology, Lexicon and Nominals*; Part 2: *Adjectives, Verbs, Adverbs, Conjunctions, Particles, Postpositions*. Folkestone (Kent): Global Oriental.

VA = Vovin, Alexander. 1995. Once again on the accusative marker in Old Korean. *Diachronica* 12/2, 223–236. https://doi.org/10.1075/dia.12.2.04vov

della Valle, Pietro. 1620. *Grammatica della lingua turca*. Iṣfahān: Ms.

Vambéry, Herrmann. 1858. *Deutsch-Türkisches Taschenwörterbuch*. Constantinopel: Gebrüder Koehler.

Vambéry, Herrmann. 1862. *Abuska. Csagataj-török szógyűjtemény. Török kéziratból fordítva. Előbeszéddel és jegyzetekkel kisérte* Budenz József. Pest.

Vámbéry, Herrmann. 1867. *Ćagataische Sprachstudien, enthaltend grammatikalischen Umriss, Chrestomathie, und Wörterbuch der ćagataischen Sprache*. Leipzig: Brockhaus.

Vambéry, Ármin (ed. & transl.). 1870a. *Uigurische Sprachmonumente und das Kudaktu-Bilik. Uigur-text mit Transscription und Übersetzung nebst uigur-deutschen Wörterbuche und lithografirten Facsimile aus dem Originaltexte des Kudatku bilik*. Innsbruck: Wagner Universitäts Buchdruckerei.

Vambéry, Herrmann. 1870b. Uigurisch-Türkische Wortvergleichungen. Budapest.

Vambéry, Herrmann. 1878. *Etymologisches Wörterbuch der turco-tatarischen Sprachen*. Leipzig: Brockhaus.

Vambéry, Ármin. 1879. *Die primitive Cultur des turko-tatarischen Volkes*. Leipzig: Brockhaus.

Vambéry, Herrmann. 1890. Die Sarten und ihre Sprache. *Zeitschrift der deutschen morgenländischen Gesellschaft* 44, 203–255.

Vasilevič, Glafira M. 1934. *Ėvenkijsko-russkij (tungussko-russkij) dialektologičeskij slovaŕ*. Leningrad: Učebno-pedagogičeskoe izdateľstvo.

Vasilevič, Glafira M. 1958. Toponimika Vostočnoj Sibiri. *Izvestija vsesojuznogo geografičeskogo obščestva* 1958/4, 324–335.

Vasilevič, Glafira M. 1960. K voprosu klassifikacii tunguso-mańčžurskix jazykov. *Voprosy jazykoznanija* 1960/2, 43–49.

Vasilevič, Glafira F. 1948. *Russko-ėvenkijskij (russko-tungusskij) slovaŕ*. Moskva: Gosudarstvennoe izdatel'stvo inostrannyx i nacional'nyx slovarej.

Vasilevič, Glafira F. 1958. *Ėvenkijsko-russkij slovaŕ*. Moskva: Gosudarstvennoe izdatel'stvo inostrannyx i nacional'nyx slovarej.

Vasilevič, Glafira F. 1960. K voprosu o klassifikacii tunguso-mańčžurskix jazykov. *Voprosy jazykoznanija* 1960/2, 43–49.

Vasilevič, Glafira F. 1971. Nekotorye terminy orientacii v prostranstve v tunguso-mańčžurskix i drugix altajskix jazykax. In: *Problema obščnosti altajskix jazykov*, ed. by Orest P. Sunik. Leningrad: Nauka, 223–229.

Vaughan, Thomas. 1709. *A Grammar of the Turkish Language*. London: J. Humfreys.

Veit, Veronika. 1986. Die mongolischen Völkerschaften vom 15. Jahrhundert bis 1691. In: Michael Weiers & Veronika Veit & Walther Heissig (eds.). *Die Mongolen*. *Beiträge zu ihrer Geschichte und Kultur*. Darmstadt: Wissenschaftliche Buchgesellschaft, 379–411.

Veľjaminov-Zernov, Vladimir V. 1868. *Slovaŕ džagatajsko-tureckij*. Sankt-Peterburg: Tipografija Imperatorskoj Akademii nauk.

Véliaminof-Zernof, Vladimir. 1869. *Dictionnaire Djaghataï-Turc*. Saint Pétersbourg: Imprimérie de l'Académie Impériale des Sciences.

Verbickij, V. 1884. *Slovaŕ altajskago i aladagskago narečij tjurkskago jazyka*. Kazań.Verbiest, Ferdinand (mistakenly was cited Gerbillon, Jean-François). 1696. Elementa Linguæ Tartaricæ. In: *Relations de divers voyages curieux*, IV. Partie. Paris: Mabre-Cramoisy, 1–34.

VH = Vovin, Alexander. 2000. Pre-Hankul Materials, Koreo-Japonic, and Altaic. *Korean Studies* 24, 142–155.

Vietze, Hans-Peter. 1969. Plural, Dual und Nominalklassen in altaischen Sprachen. *Wissenschaftliche Zeitschrift der Humboldt-Universität zu Berlin* – Gesellschafts– und Sprachwissenschaftliche Reihe 18:3, 481–512.

Vietze, Hans-Peter. 1981. *Wörterbuch Deutsch-Mongolisch*. Leipzig: Enzyklopädie.

Vietze, Hans-Peter. 1988/1999. *Wörterbuch Mongolisch-Deutsch*. Leipzig: Enzyklopädie / Langenscheidt.

Viguier, Jean-François 1790. *Elemens de la langue turque, ou tables analytiques de la langue turque usuelle, avec leur développement*. Constantinople: Imprimerie du Palais de France.

Višnevskij, V.P. 1836. *Načertanie pravil čuvašskogo jazyka i slovaŕ, sostavlennye dlja duxovnyx učilišč Kazanskoj ėparxii*. Kazań.

Vladimircov, Boris Jakovlevič. 1929. *Sravniteľnaja grammatika mongoľskogo piśmennogo jazyka i xalxaskogo narečija. Vvedenie i fonetika*. Leningrad: Leningradskij Vostočnyj Institut Imeni A.S. Enukidze. Reedited in Moskva: Nauka 1989.

Voskresenskij, A. 1894. *Russko-tatarskij slovaŕ* s predisloviem o proisxoždenii i ėtimologičeskix izmenenijax tatarskix slov. Kazań.

Vovin, Alexander. 1993a. *A Reconstruction of Proto-Ainu*. Brill: Leiden.

Vovin, Alexander. 1993b. About the phonetic value of the Middle Korean grapheme Δ. *Bulletin of the School of Oriental and African Studies* 66, 247–259. https://doi.org/10.1017/S0041977X00005504

Vovin, Alexander. 1993c. Towards a new classification of Tungusic languages. *Ural-Altaische Jahrbücher* 65, 99–113.

Vovin, Alexander. 1994a. Long-distance relationships, reconstruction methodology, and the origins of Japanese. *Diachronica* 11, 95–114. https://doi.org/10.1075/dia.11.1.08vov

Vovin, Alexander. 1994b. Genetic affiliation of Japanese and methodology of linguistic comparison. *Journal de la Société finno-ougrienne* 85, 241–256.

Vovin, Alexander. 1995. Once again on the accusative marker in Old Korean. *Diachronica* 12/2, 223–236. https://doi.org/10.1075/dia.12.2.04vov

Vovin, Alexander. 1999. Altaic Evidence Examining a Linguistic Macrofamily. In: *Nostratic: Examining a Linguistic Macrofamily*, ed. by Colin Renfrew & D. Nettle. Cambridge: The MacDonald Institute for Archaeological Research, 367–386.

Vovin, Alexander. 2000. Pre-Hankul Materials, Koreo-Japonic, and Altaic. *Korean Studies* 24, 142–155. https://doi.org/10.1353/ks.2000.0018

Vovin, Alexander. 2001a. Japanese, Korean and Tungusic: evidence for genetic relationship from verbal morphology. In: D. B. Honey & D. C. Wright (eds.). *Altaic Affinities*. *Proceedings of the 40th meeting of PIAC* (Provo, 1997). Bloomington: Indiana University – Research Institute for Inner Asian Studies, 83–202.

Vovin, Alexander. 2001b. North East Asian historical-comparative linguistics on the threshold of the third millennium. *Diachronica* 18, 93–137. https://doi.org/10.1075/dia.18.1.07vov

Vovin, Alexander. 2003. *A Reference Grammar of Classical Japanese Prose*. London – New York: Routledge Curzon.

Vovin, Alexander. 2004. Once Again on Lenition in Korean. *Korean Studies* 27, 85–107. https://doi.org/10.1353/ks.2005.0016

Vovin, Alexander. 2005a. Koguryŏ and Paekche: Different Languages or Dialects of Old Korean? *Journal of Inner and East Asian Studies* 2.2, 108–140. <http://contents.nahf.or.kr/files/pdf/jn/jn_003_0060.pdf>

Vovin, Alexander. 2005b. The End of the Altaic Controversy [a review article of Sergei Starostin, Anna Dybo, and Oleg Mudrak's *Etymological dictionary of the Altaic Languages*. Leiden: Brill 2003]. *Central Asiatic Journal* 49/1, 71–132.

Vovin, Alexander. 2005–2009. *A Descriptive and Comparative Grammar of Western Old Japanese*, Part 1: *Sources, Script and Phonology, Lexicon and Nominals*; Part 2: *Adjectives, Verbs, Adverbs, Conjunctions, Particles, Postpositions*. Folkestone, Kent: Global Oriental.

Vovin, Alexander. 2006. Why Manchu and Jurchen Look So Non-Tungusic. In: *Tumen jalafun jecen akū.* Festschrift for Giovanni Stary's 60th birthday, ed. by Juha Janhunenn, Alessandra Pozzi, & Michael Weiers. Wiesbaden: Harrassowitz, 255–66.

Vovin, Alexander. 2006 [2009]. Tungusic Languages. In: *Concise Encyclopedia of Languages of the World*, ed. by Keith Brown & Sarah Ogilvie. Amsterdam – Boston: Elsevier, 1103–1105.

Vovin, Alexander. 2007a. Cin-Han and Silla words in Chinese transcription. *Lingustic Promenades*: *to honor Professor Chin-Wu Kim*, ed. by Sang-Oak Lee, Choong-Yon Park, & James H. Yoon. Seoul: Hankookmunhwasa, 603–628.

Vovin, Alexander. 2007b. Korean Loanwords in Jurchen and Manchu. *Altai hakpo* 17, 73–84.
Vovin, Alexander. 2009. Japanese, Korean, and Other Non-Altaic Languages [a review article of Martine Robbeets: *Is Japanese related to Korean, Tungusic, Mongolic, and Turkic*? Wiesbaden: Harrassowitz, 2005]. *Central Asiatic Journal* 53, 105–146.
Vovin, A. 2010. *Koreo-Japonica: A re-evaluation of a common genetic origin*. Honolulu: University of Hawai'i Press.
Vovin, A. 2013a. Northeastern and Central Asia: "Altaic" linguistic history. In: *The Encyclopedia of Global Human Migration.* Vol. I. *Prehistory*, ed. by Immanuel Ness & Peter Bellwood. Malden – Oxford – Chichester: Wiley-Blackwell, 197–203.
Vovin, Alexander. 2013b. From Koguryŏ to T'amna*. Slowly riding to the South with speakers of Proto-Korean. *Korean Linguistics* 15:2, 222–240.
Vovin, Alexander. 2013c. First and second person singular pronouns: a pillar or a pillory of the 'Altaic' hypothesis? *Türk Dilleri Araştırmaları* 21/2, 251–278.
Vovin, Alexander. 2014 Why Koreanic is not Demonstrably Related to Tungusic? In: *Korean within Altaic Languages and Altaic Languages within Korean*, ed. by To Soo Hee & Chung Kwang. Seoul: Aleum Publishers (Altaic Series 2), 97–117.
Vovin, Alexander. 2015. Eskimo Loanwords in Northern Tungusic. *Iran and the Caucasus* 19, 87–95. https://doi.org/10.1163/1573384X-20150107
Vovin, Alexander. 2017a. Old Korean and Proto-Korean **r* and **l* revisited. Paper presented at the *20th Meeting of the International Circle of Korean Linguistics* (Helsinki, June 27–29, 2017).
Vovin, Alexander. 2017b. Origins of the Japanese Language. In: *Oxford Research Encyclopedia of Linguistics* <http://linguistics.oxfordre.com/view/10.1093/acrefore/9780199384655.013.277>
Vovin, Alexander. 2017c. *Interpretation of the Hüis Tolgoi inscription*. Paper presented at 60th PIAC, (Székesfehérvár, Hungary, August 31, 2017).
Vovin, Alexander. 2018. An Interpretation of the Khüis Tolgoi inscription. *Journal Asiatique* 306.2, 303–313.
Vovin, Alexander. 2020. Reconstruction based on external sources: Ainu, Chinese dynastic histories, and Korean chronicles. Chapter 2 in: *Handbook of Japanese historical linguistics*. In: Frellesvig, B., Kinsui, S. & Whitman, J. De Gruyter Mouton.
Walravens, Harmut (ed.). 2006. *Bibliographies of Mongolian, Manchu-Tungus, and Tibetan Dictionaries*, compiled by Larry V. Clark, John R. Krueger, Manfred Taube, Hartmut Walravens, Michael L. Walter. Wiesbaden: Harrassowitz.
Wang, Qingfeng. 2005. *Manyu yanjiu*. (ed. Sun Hongkai). Beijing: Minzuchubanshe.
Weiers, Michael. 1969. *Untersuchungen zu einen historischen Grammatik des präklassischen Schriftmongolisch*. Wiesbaden: Harrassowitz.
Weiers, Michael. 1972. *Die Sprache der Moghol der Provinz Herat in Afghanistan (Sprachmaterial, Grammatik, Wortliste)*. Opladen: Westdeutsche Verlag.
Weiers, Michael. 2003. Moghol. In: *The Mongolic Languages*, ed. by Juha Janhunen. London: Routledge, 248–264.
Werner, Heinrich. 2002. *Vergleichendes Wörterbuch der Jenissej-Sprachen*, 1–3. Wiesbaden: Harrassowitz.

Whaley, Lindsay J., Grenoble, Lenore A., Fengxiang Li. 1999. Revisiting Tungusic Classification from the Bottom up: A Comparison of Evenki and Oroqen. *Language* 75/2, 286–321. https://doi.org/10.2307/417262

Whitman, John. B. 1985. *The phonological basis for the comparison of Japanese and Korean*. Ph.D. dissertation: Harvard University.

Whitman, John. 1990. A rule of medial **-r-* loss in pre-Old Japanese. In: *Linguistic Change and Reconstruction Methodology*, ed. by Philip Baldi. Berlin – New York: Mouton de Gruyter, 512–545.

Whitman, John. 2008. The source of the bigrade conjugation and stem shape in pre-Old Japanese. In: *Proto-Japanese: Issues and Prospects*, ed. by Bjarke Frellesvig & John Whitman. Amsterdam – Philadelphia: John Benjamins, 159–174.

Whitman, John. 2012. The Relationship between Japanese and Korean. In: *The Languages of Japan and Korea*, ed. by Nicolas Trantner. London: Routledge, 24–38.

Whitman, John. 2015. Old Korean. In: *The Handbook of Korean Linguistics*, ed. by Lucien Brown & Jaehoon Yeon. London: Wiley-Blackwell, 421–438.

Whymant, A. Neville John. 1926. *A Mongolian Grammar. Outlining the Khalkha Mongolian with Notes on the Buriat, Kalmuck, and Ordos Mongolian*. London: Kegan Paul.

Witsen, Nicolaas. 1705. *Noord en Oost Tartarye*. Amsterdam: François Halma.
<http://www.dbnl.org/tekst/wits008noor02_01/colofon.php>
Russian translation <http://resources.huygens.knaw.nl/retroboeken/witsen/#page=122&accessor=toc&source=1>

Wolff, Fritz. 1910. *Avesta. Die heiligen Bücher der Parsen*. Strassburg: Trübner.

Wu Hugjiltu. 2003. Bonan. In: *The Mongolic Languages*, ed. by Juha Janhunen. London: Routledge, 325–345.

Wurm, S. A. & Baumann, Theo. 1988. *Language Atlas of China* / *Zhongguo yuyan dituji*. (Pacific Linguistics, 102). Hong Kong: Longmann.

Xakasskij slovaŕ onlajn. <http://www.sostik.info/gram-5.php>

Xalfin, Sahit. 1785. *Tatarskij slovaŕ i kratkaja grammatika pri kazanskix gimnazijax*. Kazań.

Xal'fin, Ibragim. 1809. *Azbuka i grammatika tatarskago jazyka s pravilami arabskago čtenija*. Kazań.

Xaŕkova, Svetlana S. & Ubušieva, Bezina E. 1986. *Kalmycko-mongoľsko-russkij slovaŕ*. Ėlista: Kalmyckoe knižnoe izdateľstvo.

Xelimskij, Evgenij A. 1984. Genetičeskie svjazi ajnskogo jazyka [Review of Patrie 1982]. *Referatnyj žurnal*: *Obščestvennye nauki – zarubežom – jazykoznanie* 1984/4, 61–65.

Xelimskij, Evgenij A. 1985. Samodijsko-tungusskie leksičeskie svjazi i ix ėtno-istoričeskie implikacii. In: *Uralo-altaistika: arxeologija, ėtnografija, jazyk*. Novosibirsk: Nauka, 206–213.

Xelimskij, Evgenij A. 1986a. Rešenie dilemm pratjurkskoj rekonstrukcii i nostratika. *Voprosy jazykoznanija* 1986/5, 67–78.

Xelimskij, Evgenij A. 1986b. Proisxoždenie drevnetjurkskogo čeredovanija *r* ~ *z* i dillema 'rotacizma-zetacizma'. *Sovetskaja tjurkologija* 1986/2, 40–50.

Xelimskij, Evgenij A. 1986c. O dvux fonetičeskix zakonax v altajskix jazykax. In: *Istoriko-kuľturnye kontakty narodov altajskoj jazykovoj obščnosti: Tezisy dokladov XXIX sessii*

PIAC, II: *Lingvistika* (Taškent, IX 1986). Moskva: Nauka (Institut vostokovedenija – Akademija Nauk SSSR), 121–124.

Xiamusi, Huma'er & Sailike, Jiaheman. 2009. *Zhongguo Hasake*. Wulumuqi: Xinjiang renmin chubanshe.

Yamakoshi, Yasuhiro. 2003. Uchimongoru hokubu ni okeru mongoru kei shogengo hikaku kihon goi [A comparative basic vocabulary for some Mongolic languages spoken in northern Inner Mongolia]. In: *Kankitataiheiyoo-no gengo* [*Languages of the North Pacific Rim*], 10, ed. by Toshiro Tsumagari, 139–213. <https://www.academia.edu/Documents/in/Buryat_Language>

Z = Numerals collected at the website <http://www.zompist.com/numbers.shtml>

Zajączkowski, Ananiasz. 1954–1958. *Słownik arabsko-kipczacki z okesu Państwa Mameluckiego, Bulġat al-muštāq fī luġat at-turk wa-l-qifǯāq*, część II: verba; I: nomina. Warszawa: Państwowe Wydanictwo Naukowe.

Zajączkowski, Ananiasz. 1965. Chapitres choisis du Vocabulaire arabe-kiptchak "*ad- Durraᵗ al-muḍīʾa fī l-luġat at-Turkīya*" (I & II) *Rocznik Orientalistyczny* 29/1, 39–98 & 29/2, 67–116.

Zajączkowski, Ananiasz. 1969. Chapitres choisis du Vocabulaire arabe-kiptchak "*ad- Durraᵗ al-muḍīʾa fī l-luġat at-Turkīya*" (III) *Rocznik Orientalistyczny* 32/2, 19–61.

Zaxarov, Ivan I. 1875. *Polnyj mańčžursko-russkij slovaŕ*. Sankt Petersburg: Imperatorskaja Akademija nauk.

Zaxarov, Ivan I. 1879. *Grammatika mańčžurskogo jazyka*. Sankt Petersburg: Imperatorskaja Akademija nauk.

ZDMG = Zeitschrift der Deutschen Morgenländischen Gesellschaft.

Zhang, Yanchang & Bing, Li & Xi, Zhang. 1989. *Elunchunyu*. Jilin.

Zhang, Yanchang & Bing, Li & Xi, Zhang. 1989. *Hezheyu*. Changchun: Jilin daxue chubanshe.

Zhengzhang, Shangfang. 2003. 上古音系 *Shàng gǔ yīn xì* ('Old Chinese Phonology'). Shanghai: Shanghai Education Press.

Zhong, Jinwen. 2007. *Xibu yuguyu miaoxie yanjiu*. Beijing: Minzu chubanshe.

Zikmundová, Veronika. 2010. The function of descriptive verbs in colloquial Sibe. 1. The basic pair of verbs of motion *ji-* 'to come' vs. *gen-* 'to visit'. *Mongolo-Tibetica Pragensia '10. Ethnolinguistics, Sociolinguistics, Religion and Culture* 3/2, 95–123.

Zikmundová, Veronika. 2013. *Spoken Sibe. Morphology of the inflected parts of speech*. Praha: Karolinum.

ZM = Iwamura, Shinobu et al. 1961. *The Zirni Manuscript*. Kyoto: Kyoto University 1961.

Zolotnickij, N.I. 1875. *Kornevoj čuvašsko-russkij slovaŕ, sravnennyj sъ jazykami i naréčijami raznyx narodov tjurkskoho, finnskago i drugixъ plemenъ*. Kazań: Tipografija Imperatorskogo Univerziteta.

Zwartjes, Otto (ed.). 2009. *Melchor Oyanguren de Santa Inés: Arte de la lengua japona (1738)* (Lingüística misionera, 2). Madrid: Iberoamericana.

Zwick, Heinrich A. 1853. *Handwörterbuch der Westmongolischen Sprache*. Villingen – Donaueschingen: Heinemann.

Internet sources

http://altaica.ru/
http://glottolog.org/resource/languoid/id/tung1282
http://lingsib.iea.ras.ru/en/
http://lingsib.iea.ras.ru/en/bibliography/uilta.shtml
http://www.dartmouth.edu/~trg/biblio.html
http://www.gks.ru/free_doc/new_site/perepis2010/croc/Documents/Vol4/pub-04-05.pdf

Studia Uralo-Altaica: https://protouralic.wordpress.com/2018/03/15/studia-uralo-altaica-online/
Tungusic Research Group at Dartmouth College <http://www.dartmouth.edu/~trg/biblio.html>
Turkic Languages: https://www.digizeitschriften.de/en/dms/toc/?PID=PPN666048797
http://s155239215.onlinehome.us/turkic/40_Language/AltaicHistoriographyEn.htm

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