The Consonant System of West Middle Mongol*

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A quadrilingual manuscript of the Muqaddimat al-Adab created in Central Asia in the fifteenth century AD contains many West Middle Mongolian words in Arabic transcription. Taking consonantal differences and implicational universals into consideration, the author posited in Saitô (2009) eight phonemic vowels /i, e, a, o, u, ü, ö, ï/ for the Mongolian language recorded in the Muqaddimat al-Adab. In the present paper, he investigates the consonant system of the same language and sets up the following seventeen consonant phonemes through analysis of the use of Arabic characters in the document: /t, k, b, d, g, č, ǰ, s, š, h, r, l, m, n, ŋ, w, y/.

Keywords: West Middle Mongol, consonant system, Muqaddimat al-Adab, Arabic transcription

1. Introduction

In this paper the author reveals the inventory of consonant phonemes in the West Middle Mongolian language transcribed in Arabic script in the quadrilingual manuscript of the Muqaddimat al-Adab[1)].

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* This is a slightly modified version of my article appeared in the Proceedings of the Ninth Seoul International Altaistic Conference held in Suncheon in July 2009.

1) Several other multilingual vocabularies with Arabic-transcribed Middle Mongolian words are known. But, they all contain much fewer words than the Muqaddimat al-Adab. (1) Kitāb Majmū‘ Turjumān Turkī wa-‘ajamī wa-Muğalī [So-called “Leiden manuscript”]. Yoshio Saitô, *The Mongolian Words in Kitâb maǰmû‘ turǰumân turkî wa-‘aǰamî wa-muğalî:*

The Muqaddimat al-Adab is one of the major works of al-Zamakhšarī[2] in the field of *al-luğat* or lexicography in Arabic philology, that was created as a book for learning Arabic, and a copy of which was dedicated to the Khwarazm Shah Atsïz[3]. It was originally a work on the Arabic language with Arabic-Persian lexicon and Arabic grammar consisting of five sections: Nouns, Verbs, Particles, Declension, and Conjugation. This work enjoyed a high reputation and versions with additional languages were made later.

A manuscript of the Muqaddimat al-Adab with Arabic, Persian, Chagatay and Mongol created in the fifteenth century was discovered by Abdurauf Fitrat[4] in the Avicenna Library[5] in Bukhara in the early twentieth century. It lacks the last three sections, but is the only manuscript with Mongol we have ever known. The linguistic data used in this paper are from a copy of the work made in the twentieth century[6].

Text and Index, Shoukadoh, Kyôto, 2006. (2) Kitāb ḥilyat al-insān wa ḥalbat al-lisān [So-called "Ibn Muhannā's vocabulary"]. [The Istanbul manuscript] K. M. Rif'at, *Hilyetü'l-insan ve hilbetü'l-lisan / Cemaleddin b. el-Mühenna İbnü'l-Mühenna*. İstanbul, 1924. Н. Поппе, Приложение IV, *Монгольский словарь Мукаддимат ал-адаб*. АНСССР, Москва-Ленинград, 1938. (3) [So-called "Istanbul vocabulary"]. This quadrilingual vocabulary is attached to the Istanbul manuscript of the Šâmil al-luğa. According to Akçay (2010), the vocabulary is, however, not a part of the Šâmil al-luğa because it is included in none of the other manuscripts of the work. Louis Ligeti, Un vocabulaire mongol d'Istanboul, *Acta Orientalia Hungarica* 14. 1962. Louis Ligeti, Notes sur le vocabulaire mongol d'Istanboul, *Acta Orientalia Hungarica* 16. 1963. Mustafa S. Kaçalin, Hüseyinoğlu Hasan'ın Dört Dilli Sözlüğü: Şâmilü'l-Luğa, *Türk Dilleri Araştırmaları* 7. 1997. (4) The Rasūlid Hexaglot. Peter B. Golden ed., *The King's Dictionary, The Rasûlid Hexaglot: Fourteenth Century Vocabularies in Arabic, Persian, Turkic, Greek, Armenian and Mongol*. Brill, Leiden, 2000.

2) 467-538AH/1075-1144AD.

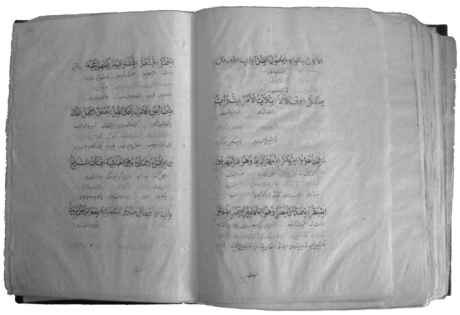
3) 521-551AH/1127-1156AD.

4) ['abd al-Ra'ūf Fiṭrat] Uzbek thinker, revolutionist and writer. 1886-1938AD.

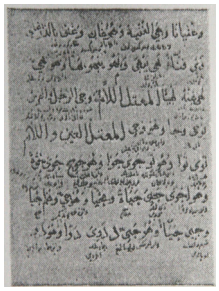
5) Библиотека имени Авиценны.

6) Nicholas Poppe was interested in the work. But, neither his request for a loan of the manuscript nor his request for photographing it for his use was met by the library. However, they made a new copy by hand and

sent it in 1928 to Leningrad for temporary use. This 1,066-page copy was sent back to Bukhara after being photographed in Leningrad. In 1938, Poppe published the Mongolian and Chagatay words and phrases with a Russian translation, which were arranged in the alphabetical order of the Mongolian words in his Roman transcription (Поппе 1938). After many years, the whereabouts of the manuscript and its copy became unknown to Mongolists, and Poppe's book, which not only lacks the Arabic and Persian parts, but also omits many Mongolian words, had long been the only document available to them. In February 2004, Kanno Hiroomi (菅野裕臣) found that the copy of the manuscript returned to Bukhara from Leningrad is now in the possession of the Alisher Navoi State Museum of Literature (Государственный литературный музей имени Алишера Навойи) in Tashkent. According to Zakhid Islamov, the original manuscript is lost and now a photograph of a page included in the Uzbek Soviet Encyclopaedia (Ўзбек совет энциклопедияси, том 4, стр.427, Тошкент, 1973) is the only image of it we can see. The manuscript owned by the museum, therefore, is the only existing copy known to us.



The quadrilingual manuscript of the Muqaddimat al-Adab copied in the early twentieth century
(No.202, The Alisher Navoi State Museum of Literature)



A page in the original manuscript of the Muqaddimat al-Adab
(Uzbek Soviet Encyclopaedia, 1973, Vol.4, p.427)

In September 2004, Kanno Hiroomi and Saitô Yoshio (斎藤純男) visited Saidbek Khasanov, director of the Alisher Navoi State Museum of Literature, and obtained permission from him to reproduce the manuscript. Kuribayashi Hitoshi (栗林均) soon joined Kanno and Saitô, and in 2005 they received a three-year grant from the Japan Society for the Promotion of Science for the study of the Altaic languages in the manuscript with the cooperation of Zakhid Islamov and Khamidbek Khasanov. In January 2008, they made a colour facsimile of the manuscript with introductory articles by Saidbek Khasanov and Zakhid Islamov. They also produced a collection of some of their articles and materials concerning the manuscript. And, greatly modifying his database

2. Transcription Method Adopted in the Muqaddimat al-Adab

According to Mansuroğlu (1959), there are two types of methods for transcribing Turkic in Arabic script: one in the Arabo-Persian tradition and the other in the Uighur tradition. The main features which distinguish these two methods are as follows[7]:

	Transcription Methods	
	Arabo-Persian tradition	**Uighur tradition**
Plene writing	– [8]	+
Use of ‹p› and ‹č›	+	– [9]
Use of ‹ş› in back-vocalic words	+	– [10]
Transcription of [ŋ]	‹n› or ‹k›	‹nk›

The same transcription methods as were employed in Turkic documents were applied to Mongol, and the method adopted in the Muqaddimat al-Adab is basically that of the Uighur tradition.

If the same phonogram has been used for a long period in the same language, the spelling of a word may poorly reflect the phonetic form of the word as is the case with Mongolian script, English orthography, and so on. The Arabic script has never been adopted as an official script of the Mongolian language, and was only used for transcribing Mongol in a few lexical works made during the period when the

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of the Mongolian words in Poppe's work, Saitô created a Romanized text and word-index of the Mongolian parts of the manuscript, which contain about 27,000 tokens. Although these works were all produced as a research report to be submitted to the Japan Society for the Promotion of Science, extra copies of them were made for distribution to research institutions.

7) Transliterated forms are in single French quotation marks (‹ ›) in this paper. In the author's transcription of words in Mongolian script, *k* and *g* are used in place of *q* and *γ* respectively. E.g.: *kagan* (kagān) "emperor."

8) In this transcription method, short vowels are shown with vowel signs placed above and below letters when necessary.

9) The letters ‹b› and ‹j› are used for [p] and [tʃ] respectively.

10) The letter ‹s› is used for both front- and back-vocalic words.

Mongols had some influence on Central and West Asian societies. Analysis of Arabic transcription, therefore, can to some extent reveal the phonetic characteristics of the Mongolian language at the time it was transcribed.

3. Vowel System

Only three categories of vowels can be distinguished in Arabic script, but Saitô (2009) assumed the following eight vowel system for the Mongolian language of the Muqaddimat al-Adab, taking consonantal differences and implicational universals into consideration[11]:

/i/	/ü/	/ï/	/u/
/e/	/ö/		/o/
		/a/	

4. Consonant Phonemes

4.1 The Consonant letters

The consonant letters used for transcribing Mongolian words are as follows:

(‹p›)	‹t›			‹k›	‹q›	
‹b›	‹d›			(‹g›)	‹ğ›	
		(‹č›)				
		‹ǰ›				
	‹s›	‹š›	‹ṣ›			‹h›

11) The vowel /ï/ may have been losing its phonemic status, merging with /i/ in some words. For example, the word *orkï-* "to throw" has both ‹âwrqy› and ‹âwrky›, the word *gkir* "dirt," both ‹kyr› and ‹qyr›. The occurrence of ‹š› in the following words can only be explained by assuming [i] if they originally had [s] as in Written Mongol: ‹ğâšwn› (gasïgūn) "bitter," ‹byšwn› (bïsïgūn) "quick," ‹šybâwwn› (sïbagūn) "bird," ‹šybâr› (sïbar) "mud." There are some pieces of evidence for vowel reduction due to stress accent, which does not concern us here.

‹r›
‹l›
‹m› ‹n›
‹w› ‹y›

4.2 The Letters ‹s›, ‹ṣ› and ‹š›

In this document the use of the letter ‹ṣ› (ṣād) is limited to some words. The Mongolian words *üsün* "hair" and *usun* "water" appear as ‹âwswn› and ‹âwṣwn› respectively, making a distinction in script by using the letter ‹s› (sīn) for the former and ‹ṣ› (ṣād) for the latter. The letter ‹ṣ› represents a voiceless alveolar fricative with velarization, i.e. the consonant [s] articulated with a simultaneous raising of the back of the tongue. As the words in which the plain and velarized alveolar fricatives appear are front-vocalic and back-vocalic respectively in other Mongolian languages, the difference between these two fricatives can be interpreted as allophonic, being conditioned by the tongue position of the adjacent vowels[12].

phoneme	**allophone reflected in script**	**environment**
/s/	[s]	in front-vocalic words
	[sˠ]	in back-vocalic words

The letters ‹š› (shīn) and ‹s› (sīn) appear in the same environments:

Muq.	**Mo.**	**meaning**	**Muq.**	**Mo.**	**meaning**
‹ğâ**š**wn›	(gasïgūn)	"bitter"	‹qâ**š**ânk›	(kašaŋ)	"lazy"
‹**sw**bh›	(sagūba)	"sat"	‹ǰâ**sâ**bh›	(ǰasaba)	"repaired"
‹âww**šk**y›	(agūsgi)	"lung"	‹ǰym**yš**›	(ǰimis)	"grape"
‹sy**sk**ây›	(isägäi)	"felt"	‹n**ys**bh›	(nisbä)	"flew"

Therefore, a phoneme /š/ is set up.

12) Therefore, we can assume that the language had a phonemic contrast between close front rounded vowel *ü* [y] and close back rounded vowel *u* [u]. The presence of /ü/ implies the presence of /o/ and /e/.

phoneme	**allophone reflected in script**
/š/	[ʃ]

4.3 The Letters ‹k› and ‹q›

The sequences of characters ‹kâ›/‹qâ›, ‹kw›/‹qw›, and ‹ky›/‹qy› can also be interpreted as a reflection of the front/back contrast in vowel because the words with ‹k› and those with ‹q› are front-vocalic and back-vocalic respectively in other Mongolian languages.

Muq.	**Mo.**	**meaning**	**Muq.**	**Mo.**	**meaning**
‹âw**kâr**›	(ükär)	“ox”	‹**kw**čyn›	(küčün)	“power”
‹âw**qâ**bh›	(ukaba)	“understood”	‹**qw**dâl›	(kudal)	“lie”
‹**kw**lâswn›	(köläsün)	“wages”	‹hy**ky**n›	(äkin)	“head”
‹**qw**nyn›	(konïn)	“sheep”	‹sa**qy**bh›	(sakïba)	“protected”

The consonants [k] and [q], which are rendered with ‹k› (kāf) and ‹q› (qāf) respectively, are allophones of the same phoneme.

phoneme	**allophone reflected in script**	**environment**
/k/	[k]	in front-vocalic words
	[q]	in back-vocalic words

4.4 The Letters ‹q›, ‹ğ› and ‹g›

The sounds which are rendered with ‹q› (qāf) and ‹ğ› (ghayn) appear in the same phonetic environments, and therefore, are in contrast.

Muq.	**Mo.**	**meaning**	**Muq.**	**Mo.**	**meaning**
‹**qâ**ǰâr›	(kačar)	“cheek”	‹**qw**čybh›	(kučïba)	“covered”
‹**ğâ**ǰâr›	(gaǰar)	“place”	‹**ğw**ǰyn›	(gučin)	“thirty”

The character ‹g› (gāf) appears only seven times in original Mongolian words (one occurrence for each of seven different words) in the Muqaddimat al-Adab. The forms with it are probably later modifications in the process of copying the manuscript because the letter ‹g› became in use much later than the period this work was first created[13].

The letter ‹ğ› (ghayn), which corresponds to the voiced uvular fricative in Arabic, appears only in back-vocalic words in Mongol.

From the lack of ‹g› in Arabic script, the uneven distribution of ‹ğ›, and the use of the letter ‹k› (kāf) for the sound corresponding to *g* in other Mongolian languages[14], we could say that the situation concerning voiced velar and uvular consonants was as follows:

phoneme	/g/	
allophone reflected in script	[ɡ]	[ɢ][15]
environment	in front-vocalic words	in back-vocalic words
transcription	with the letter ‹k›	with the letter ‹ğ›

4.5 The Letter Sequences ‹nk› and ‹nq›

In most cases the sequence ‹nk› represents the velar nasal [ŋ], which can be known from the following two phrases in the manuscript[16]:

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13) The character began to be used only around the eighteenth century in Persian.

14) E.g.: ‹kyr› (gär) “house,” ‹kwry› (gürü) “pebble,” ‹âyrkân› (irgän) “people,” ‹âwkây› (ügäi) “not.”

15) The letter ‹ğ› represents the voiced uvular fricative [ʁ] in Arabic, but we cannot be certain if Mongol also had the fricative. There can be three allophonic possibilities from a point of view of general phonetics: (1) [ɢ] in all environments; (2) [ʁ] in intervocalic position and [ɢ] elsewhere; and (3) [ʁ] in all environments.

16) The velar nasal [ŋ], which did not exist in Persian and Arabic, was sporadically indicated with ‘the letter ‹k› with three dots above,’ which the author transliterates with ‹ǩ›. (A sharp sign “#” indicates a word-final allograph appearing word-medially.)

Muq.		**Mo.**	**meaning**
‹ty**ǩ**#lâbh›	teŋlebe	(täŋläbä)	“balanced”

The following Chagatay word is in a Mongolian phrase:

Muq.	
‹tâmwq#dâqy#lârny**ǩ**›	tamuqdaqïlarnïŋ
Cha.	**meaning**
(tamuk-dakï-lar-nïŋ)	“people in the hell (gen.)”

The letter sequence ‹nǩ› (‹nk› with three dots above the latter letter) may indicate that the sequence does not correspond to [nk] or [nɡ], but to [ŋ]:

Muq.		**Mo.**	**meaning**
‹ty**nǩ**ry›	teŋri	(täŋri)	“heaven”
‹ây**nǩ**›	eŋ	(äŋ)	“very, most”

location	408b-4-3	408b-4-5
Muq.	‹qbârâr nk klbh›	‹âynh qbâr nk klkǰy›
Mo.	(kabarïyār ‹nk› käläbä)	(änä kabar ‹nk› käkägči)
meaning	Said ‹nk› with a nose[17]	This is a person who says ‹nk› with a nose[18]

The sequence ‹nk› appears in both front- and back-vocalic words.

Muq.	**Mo.**	**meaning**
‹ǰy**nk**›	(ǰiŋ)	“scales”
‹dwrâ**nk**›	(dügŭräŋ)	“full”
‹ty**nk**ry›	(täŋri)	“heaven”
‹ǰwbâlâ**nk**›	(ǰobalaŋ)	“grief”
‹âwlâ**nk**›	(olaŋ)	“saddle girth”
‹âw**nk**šyqw›	(uŋsïku)	“read”

The spelling ‹nq› may indicate a post-velar or uvular nasal [ɴ].

Muq.	**Mo.**	**meaning**
‹m**nq**lây›	(maŋlai)	“forehead”
‹tâ**nq**lây›	(taŋlai)	“palate”
‹â**nq**lyǰâgâbh›[19]	(ïnčaglaba)	“neighed”
‹dâ**nq**lâqsân#yân›	(daŋlagsanïyān)	“pawned (rfl.)”
‹ǰwbâlâ**nq**dw›	(ǰobalaŋdu)	“grief (dat.)”
‹ǰwbâlâ**nq**y›	(ǰobalaŋï)	“grief (acc.)”
‹ǰâ**nq**y›	(ǰaŋï)	“knot (acc.)”

The occurrence of ‹nq› is limited to some back-vocalic words, while ‹nk› appears both in front- and back-vocalic ones[20]. As the word *ǰobalaŋ* has

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‹qâšâ**nǩ**› qašaŋ (kašaŋ) “slow, lazy”

The form ‹âwnǩh› for *öŋgä* (485a-1-3-3) is most likely an error, but this error may indicate that ‹n› represents [ŋ].

17) The meaning of the corresponding Arabic sentence is “He spoke through the nose.”

18) The meaning of the corresponding Arabic sentence is “And he is a person who speaks through the nose.”

19) This word is metathesized.

20) The letter sequence ‹nk› appearing in back-vocalic words may represent [ɴ].

both forms (‹ǰwbâlâ**nk**› and ‹ǰwbâlâ**nq**›), the difference between [ŋ] and [ɴ] are not phonemic.

The nasals [n] and [ŋ] are in contrast in word-final position[21] and belong to different phonemes[22].

‹âwlâ**n**›	olan	(olan)	“many”
‹âwlâ**nk**›	olaŋ	(olaŋ)	“saddle girth”

phoneme	**allophone reflected in script**	**environment**
/n/	[n]	
/ŋ/	[ŋ]	in front-vocalic words
	[ɴ]	in back-vocalic words

4.6 The Letter ‹č›

The letter ‹č› (chē) is a later invention in Persian[23]. In the Muqaddimat al-Adab, this letter is used only in some words such as ‹čwn› (čögān) “little,” ‹ğâqčh› (gagča) “only,” ‹âwnqâčh› (oŋgača) “boat,” ‹twbčy› (tobčï) “button,” ‹âwčh› (ugūča) “rump,” -‹kčy› -‹qčy› “(nomen actoris).” The use of ‹č› is very limited even in Persian words in the document. From the infrequent use of the letter and the linguistic data of

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21) The sequence ‹nk› represents [ŋk] or [ŋg] in the following words:

Muq.		**Mo.**	**meaning**
‹mnkw›	möŋkü	(möŋkä)	“eternal”
‹âwnkâtw›	öŋgetü	(öŋgä-tü)	“colour”
‹kwnkân›	köŋgen	(köŋgän)	“light”
‹šynkâbh›	šiŋgebe	(siŋgäbä)	“dissolved”

Cf. footnote 22.

22) The Arabo-Persian method may have been applied to some words:

Muq.		**Mo.**	**meaning**	
‹âwlâ**n**›	olaŋ	(olaŋ)	“saddle girth”	Cf. ‹âwlâ**nk**›
‹dwrâ**n**›	dŭreŋ	(dügŭräŋ)	“full”	Cf. ‹dwrâ**nk**›

If there was no intrusive consonant, the following words may have [ŋ] as an onset:

Muq.		**meaning**
‹ǰwbâlâ**nq**y›	ǰobalaŋï	“unhappiness (acc.)”
‹ǰâ**nq**y›	ǰaŋï	“knot”

23) The letters ‹p›, ‹č› and ‹ž› were invented in the late thirteenth century, but their use was not widespread until around the sixteenth century.

other Mongolian languages, it could be possible to say that /č/ existed in the Mongolian language of our manuscript, but it was not fully written with the "new" letter ‹č›.

phoneme	**allophone reflected in script**	**environment**	**transcription**
/č/	[tʃ]		with the letter ‹j›

4.7 The Letter ‹p›

The letter ‹p› (pē) is also a later invention in Persian[24]. Persian has /p/, but the number of occurrence of this letter is very small even in Persian words in our manuscript. The Mongolian word *bi* "I" appears as ‹py› twice in the manuscript, but they are both on the same line of the same page (343a-3). The word *bayan* ‹bâyân› "rich" is written as ‹pâyân› four times, but they are distributed only on last pages of the manuscript after f.379b. Therefore, these may be scribal errors[25] made in later periods in the process of making copies and cannot be evidence for the presence of /p/. There is a possibility that /p/ was rendered with ‹b›, but it is much more probable from the linguistic data of other Mongolian languages that the Mongolian language of the Muqaddimat al-Adab did not have *p* as a phoneme[26].

4.8 The Letter ‹w›

The consonant [w] is observed in the following word[27]:

Muq.		**Mo.**	**meaning**
‹ğwwh›	ğowa	(gowa)	"beautiful"

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24) Cf. footnote 29.

25) Persian has the following words: ‹py› *pai* "foot," ‹pâyân› *pāyān* "end."

26) Cf. Maddieson (1984: 35): "Thus, /p/ is more likely to be "missing" than /k/ and an implicational hierarchy can be set up such that presence of /p/ implies the strong likelihood of the presence of /k/, which similarly implies presence of /*t/." (The asterisk represents the combined category of dental and alveolar.)

27) Cf.

Muq.		**Mo.**	**meaning**
‹âwrtwwâr›	urtuwār	(urtu bar)	"long (instr.)"

It also appears as an intrusive sound after a rounded vowel:

Muq.		**Mo.**	**meaning**
‹sywrqâqwwâsh›	soyurqaquwāsa	(soyurkaku-ača)	“grant (abl.)”
‹qâyğwwâsh›	qaiğuwāsa	(kaigu-ača)	“anxiety (abl.)”

The sequences ‹âww›, ‹yww› and ‹www› are observed in such words as follows:

	Muq.	**Mo.**	**meaning**
‹âww›	‹dâwwn›	(dagūn)	“sound”
	‹ǰâwwn›	(ǰagūn)	“hundred”
	‹qlâwwn›	(kalagūn)	“hot”
	‹šybâwwn›	(sïbagūn)	“bird”
	‹hwlâww›	(ülägŭ), (ilägŭ)	“extra”
	‹ǰâwwn›	(ǰägŭn)	“needle”
	‹kyrâwwr›	(kärägŭr), (kärägŭl)	“quarrel”
	‹âwqâwwlbh›	(ukagūlba)	“caused to understand”
	‹kybtâwwlbh›	(käbtägŭlbä)	“made lie down”
‹yww›	‹ârywwn›	(arïgūn)	“clean, pure”
‹www›	‹mwww›	(magū)	“bad”
	‹kwǰwwwn›	(küǰügŭn)	“neck”

As the Arabic transcription adopted in the Muqaddimat al-Adab makes no graphical distinction of vowel length[28], the character sequences ‹âww›,

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28) A comparison of some Mongolian words with their corresponding Chagatay ones gives evidence of the presence of a contrast in vowel length and non-distinction of the length in the Arabic transcription. (In the author’s transliteration, *madda* is shown with a tilde “~” after *’alif* “â.”)

		Muq.	
(1a)	**Mongol**	‹bâqtâbh šyrwdh›	(bagta-ba sïroi-da)
	Chagatay	‹bât#ty twbrâq#qâ›	(bat-tï topraq-qa)
	meaning	“had enough room on the ground” (Ar. “The place is wide”)	
(1b)	**Mongol**	‹bâqtâbh twny›	(bagta-**gā**-ba tägŭn-i)
	Chagatay	‹bât**wr**dy âny›	(bat-**ur**-dï anï)
	meaning	“contained it” (Ar. “The place is wide enough to hold it”)	

‹yww› and ‹www› most likely represent "Vowel + w + Vowel."

			Muq.	Mo.	meaning
‹âww›	a**w**ū	‹ǰâwwn›	ǰawūn	(ǰagūn)	"hundred"
	e**w**ű	‹ǰâwwn›	ǰewűn	(ǰegűn)	"needle"
‹yww›	ï**w**ū	‹ârywwn›	arïwūn	(arïgūn)	"clean, pure"
	(i**w**ű)				
‹www›	u**w**ū	‹mwww›	muwū	(magū)	"bad"
	ü**w**ű	‹kwǰwwwn›	küǰüwűn	(küǰügűn)	"neck"

The consonant *w* is in contrast with other consonants.

Muq.		Mo.	meaning
‹**âmw**lbh›	a**m**ūlba	(amugūlba)	"made rest"
‹**âdw**swn›	a**d**ūsun	(adugūsun)	"animal"
‹m**wrw**›	mu**r**ū	(murïgū)	"twisted"

Therefore, we can set up a phoneme /w/.

phoneme	allophone reflected in script
/w/	[w][29]

(2a) **Mongol** ‹hyǰybh nydwn› (ăčä-bä nidün)
Chagatay ‹â~rdy kwz› (ar-dï köz)
meaning "eyes grew tired"

(2b) **Mongol** ‹hyǰybh twny› (ăčä-**gă**-bä tägűn-i)
Chagatay ‹ârğ**wz**dy â~ny› (ar-**ğuz**-dï anï)
meaning "made him tired"

In these examples, the same form of a Mongolian verb corresponds to both transitive and intransitive forms of a verb in Chagatay. Taking the phonetic change of the sound sequences *agā*, *ägā*, etc. to a single long vowel in Mongol into consideration, we can assume that ‹bâqtâbh› (= bagt**agā**ba) and ‹hyǰybh› (= ăč**ägă**bä) were pronounced with a long vowel as [baqtaːba] and [hetʃeːbe], while ‹bâqtâbh› (= bagtaba) and ‹hyǰybh› (= ăčäbä) were [baqtaba] and [hetʃebe] with a short vowel.

Muq.		Mo.	Muq.		Mo.
‹bâqt**â**bh›	[baqtaba]	(bagt**a**ba)	‹hyǰ**y**bh›	[hetʃebe]	(ăč**ä**bä)
‹bâqt**â**bh›	[baqtaːba]	(bagt**agā**ba)	‹hyǰ**y**bh›	[hetʃeːbe]	(ăč**ägă**bä)

29) As the letter ‹w› represents both /v/ and /u/ in New Persian, the Mongolian sound corresponding to ‹w› used as a consonant letter may have had a little friction if the Mongolian language was under strong

The phonemic status of /w/, however, was weak not only because its occurrence is limited to a few environments, but because there were allomorphs without /w/:

Muq.		**Mo.**	**meaning**
‹âryywn›	arïyūn	(arïgūn)	“clean, pure”
‹ârywn›	arï’ūn	(arïgūn)	“clean, pure, holy”
‹ǰâwn›	ǰa’ūn	(ǰagūn)	“hundred”
‹mw›	mū	(magū)	“bad”
‹kwǰwwn›	küǰü’ǖn	(küǰügǖn)	“neck”
‹kwǰwn›	küǰǖn	(küǰügǖn)	“neck”

4.9 The Other Letters

The sounds represented with the other letters are in contrast:

Muq.		**Mo.**	**meaning**
‹**b**ârybh›	barïba	(barïba)	“grabbed”
‹**t**ârybh›	tarïba	(tarïba)	“sowed”
‹**t**yrh›	tere	(tärä)	“that”
‹**d**yrh›	dere	(därä)	“pillow”
‹**d**âbqwr›	dabqur	(dabkur)	“layer”
‹**ǰ**âbqâbh›	ǰabqaba	(ǰabkaba)	“lost”
‹**t**ânybh›	tanïba	(tanïba)	“knew”
‹**h**ânybh›	hanïba	(hanïba)	“closed one’s eyes”
‹tâ**n**ybh›	tanïba	(tanïba)	“knew”
‹tâ**r**ybh›	tarïba	(tarïba)	“sowed”
‹â**y**lâbh›	ilebe	(iläbä)	“sent”
‹â**y**râbh›	irebe	(iräbä)	“came”
‹ky**l**âldwbh›	keleldübe	(käläldübä)	“said”
‹ky**r**âldwbh›	kereldübe	(käräldübä)	“quarreled”

influence of Persian.

‹**b**âryldwbh›	barïlduba	(barïlduba)	“grappled”
‹**y**âryldwbh›	yarïlduba	(yarïlduba)	“burned intensely (fire)”
‹**n**âswn›	nasun	(nasun)	“age”
‹**y**âswn›	yasun	(yasun)	“bone”

From these contrasts, we can set up the following phonemes:

phoneme	**allophone reflected in script**
/b/	[b]
/t/	[t]
/d/	[d]
/j/	[dʒ]
/h/	[h]
/r/	[r]
/l/	[l]
/y/	[j]

4.10 Consonant System

The author concludes that West Middle Mongol in the Muqaddimat al-Adab had the following consonant system:

	/t/		/k/	
/b/	/d/		/g/	
		/č/		
		/j/		
	/s/	/š/		/h/
	/r/			
	/l/			
/m/	/n/		/ŋ/	
/w/		/y/		

Abbreviations

Mo.	Written Mongol
Muq.	Muqaddimat al-Adab

Symbols

‹ › transliteration
â *'alif* in transliteration

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