

# Bāla'y-balan

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# 1 Introduction

Bāla’y-balan is the name of the language created by the Ottoman mystic Mehmed ibn Fethullah ibn Ebü Tâlib in the mid-16th century and described in his *Kitâb-ı Bâleybelen* [Book of Bāla’y-balan].<sup>1</sup> The author, who is more commonly known as “Muhyî-i Gülşenî”, was born in the Balkan city of Edirne to a family that traced its origins to Shiraz in Persia. Most of Muhyî’s life, however, was spent in Egypt, where he was an active member of the Gülşenî sufi order.<sup>2</sup> Muhyî’s mysticism was the motivation for the creation of Bāla’y-balan, which he envisioned as a language of devotion rather than a regional *lingua franca* or a replacement for the languages spoken in the Ottoman Empire. Like his native Ottoman, Muhyî drew on elements of Turkish, Arabic and Persian when creating Bāla’y-balan and elements of each are recognisable in the lexicography and morphology of his language.

Presently, the only monograph on Bāla’y-balan is *Bâleybelen: İlk Yapma Dil* by Mustafa Koç (Istanbul: 2005). Besides providing a transcription of all the Bāla’y-balan texts, Koç includes original research on Muhyî’s life, the Gülşenî order, the creation of Bāla’y-balan and references to it in contemporary texts. Koç also provides his own summary of the language’s grammar and has compiled the glosses from the original manuscripts into a 10,000-word Bāla’y-balan–Turkish lexicon and its Turkish–Bāla’y-balan inverse.

The name Bāla’y-balan is formed from the noun **bāl** ‘language’ and the infinitive **balam** ‘to give life; to revive’. The linking suffix **-a** is attached to the governing noun **bāl**, giving **bāla**. The definite article **y-** precedes the governed noun **balan**, which is formed from the verb stem **bal-** plus the active participle suffix **-an**, creating the word ‘the one who gives life; the reviver’. As a whole

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<sup>1</sup>Bāla’y-balan transcribed into the Latin alphabet will appear in bold face. Arabic, Persian and Turkish will all appear in italics using the standard transcription system for Ottoman. Square brackets indicate IPA notation. English equivalents for these words will appear in single quotes when it is necessary to distinguish them from the rest of the text: **ظفم** **zafam** [zafam] *yazmak* ‘to write’. Unattested and hypothetical examples of Bāla’y-balan will be prefixed with the symbol §.

<sup>2</sup>For more on the Gülşenî movement, see John Curry’s *Transforming Muslim mystical thought in the Ottoman Empire*.

Bāla’y-balan translates as ‘the language of the one who gives life’ or simply ‘the language of the reviver’. The Arabic word *muhyî* (deriving from the Arabic root حيّ) also translates as **balan**, so an alternate reading of Bāla’y-balan could be simply ‘the language of Muhyî’.

## 2 Phonology and Orthography

Bāla’y-balan is written using the modified Arabic script also employed for Ottoman Turkish and Persian. Because Muhyî did not describe how his language was to be pronounced in *Kitâb-ı Bâleybelen*, we must rely uniquely on orthography, and it is, therefore, not possible to reconstruct the phonetics of Bāla’y-balan with complete certainty. However, I have done my best to determine how he *probably* intended Bāla’y-balan to be pronounced by evaluating Muhyî’s decisions with respect to his language’s orthography. The following section describes how I came up with my proposed phonology of Bāla’y-balan; readers not interested in the rationale for my decision can skip directly to the section on the Bāla’y-balan alphabet.

### 2.1 Ottoman Turkish Orthography

Orthographically, Bāla’y-balan is heavily influenced by Ottoman Turkish, and the modified Arabic alphabet used to write it.<sup>3</sup> While Arabic orthography distinguishes between three short and three long vowels, Turkish has four back vowels (*a, ı, o, u*) and four front vowels (*e, i, ö, ü*). To accommodate these extra sounds, Ottoman Turkish makes use of the fact that Turkish phonology does not distinguish between certain consonant pairs found in Arabic; the letters س and ص, for example, are both pronounced [s] in Turkish. When appearing in Turkish words, however, the letters show whether surrounding vowels should be pronounced in their front or back form. Thus, the conditional suffixes *-sa* and *-se* were written using the Arabic consonants ص and س respectively, where

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<sup>3</sup>The same changes to the standard Arabic script are also present in Persian.

only these letters indicate how the following vowel should be pronounced.<sup>4</sup> The consonant pairs which serve this function in Ottoman Turkish were ط-ت, ط-د and ص-س. Two more, ق-ك and غ-گ, indicate a pronunciation difference in the consonant in addition to the vowel: for example, ك is [c] while ق is [k]. The words اولمك and اولمق differ only in their final consonant but are pronounced *ölmek* and *olmak* respectively.

There are additionally numerous Arabic letters which are never used to write Turkish words and whose pronunciation is identical to a native Turkish consonant. For example, the letters ح, خ and ه are all pronounced [h], while only the latter appears in words of Turkish origin. Similarly, the letters ذ, ز and ظ are all realised [z] in Turkish. A number of these consonants also influence the pronunciation of neighbouring vowels, but since these only appear in loan words these sound changes do not have any systematic semantic meaning.

Muhyî appears to have explicitly avoided using consonants which are not native to the Turkish language in function words and affixes (which are used extensively in Bāla'y-balan for syntactic purposes). Consonants which are used in Ottoman Turkish orthography only to mark vowel pronunciation are used, but only in lexical words (nouns, verbs, adjectives and adverbs). Certain consonants, namely ذ, ض and ظ, are rarely encountered at all in the language.<sup>5</sup> The purpose of eliminating these letters from grammatical suffixes and function words appears to be to either mimic Turkish usage or to eliminate confusion between phonemes due to their identical pronunciation. If these letters were given their full Arabic values, there would be no reason to restrict their usage in Bāla'y-balan.

Further evidence comes in the letter names Muhyî created for Bāla'y-balan since the standard Arabic names of the letters would have been ambiguous: حاء, خاء and هاء are all *hâ* in Turkish. Assuming that all three letters were pronounced identically in Bāla'y-balan, each would need a distinct name, which is exactly what Muhyî did: [ħa:], [xav] and [hir] respectively. The same is done for all other consonant groups ([d], [s], [t] and [z]) where confusion would

<sup>4</sup>An additional Arabic consonant, ث, is also pronounced [s] in Turkish but appears only in Arabic loan words and does not influence the pronunciation of surrounding vowels.

<sup>5</sup>These letters are also some of the rarest in Arabic.

have occurred. Note that since Turkish distinguishes between [c] and [k], the letters ك and ق do not require this distinction and are known as **qin** and **kin** respectively.<sup>6</sup>

It is also reasonable to assume that Muhyî would select consonants which are more readily producible by speakers of Persian, Turkish and other languages which do not share the full range of Arabic consonantal phonology. Many of the sounds which I argue have been excluded from Bāla'y-balan would not even have been pronounced identically in the various dialects of Arabic spoken in the Ottoman Empire.

Since Muhyî has included consonants which, in Ottoman Turkish, influence the pronunciation of vowels in the same word, the second question is whether Bāla'y-balan has all eight vowels of Ottoman, the same three present in Arabic or some combination thereof. In my transcription, I have opted to only use the short [a], [u] and [i] and long [a:], [u:] and [i:] that can be definitively elicited from Muhyî's writing. I have done this with the caveat that he may have intended the short vowels in Bāla'y-balan to be influenced by neighbouring consonants. Under normal circumstances, the Arabic short vowels [a], [u] and [i] should be read [e], [i] and [y] in Ottoman; these usually change to [a], [u] and [u] under the influence of the following consonants: ح, خ, ص, ض, ط, ظ, ع, غ and ق. The sounds [o] and [ø] are usually only present in the initial syllable of Turkish words, and I have not used them in my Bāla'y-balan phonology.

Words in Bāla'y-balan are not required to have vowel harmony, a distinguishing feature of the Turkish language.<sup>7</sup> Words such as **qaydak kapı** 'door, gate', which has both a back **q** and a front **k**, would not be possible in a pure Turkish word. This point has further significance when we consider Bāla'y-balan's suffixes, which will not harmonise with the vowels in the root to which they are attached.

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<sup>6</sup>This distinction is not reflected in the spelling system of modern Turkish, in which both are *k*. Azeri Turkish, and other Turkic languages of the former Soviet Union that have adopted the Latin alphabet, do make use of *q* to distinguish the two sounds in writing.

<sup>7</sup>The definite article *y-* does in fact harmonise with the following word, but this is unlike the harmony found in Turkish. See section ??.

## The Alphabet

Because Bāla'y-balan's phonetics are uniquely tied to its orthography, the latter will be presented first. There are 34 letters proper used in the language, or 35 if we consider **amam** a letter in its own right. One letter, **anā** is effectively used as a vowel marker only, and two more, **var** and **yam**, can be used as either consonants or vowels.

In the transcription, a macron over a vowel indicates lengthening. Other letters with diacritics may or may not represent a pronunciation difference between them and their base form; refer to the IPA column for guidance on pronunciation.

Each letter in the Arabic alphabet may have up to four different forms depending on its position in the word (initial, medial, final or isolated). Only the isolated form is presented in the table below. Letters in Bāla'y-balan's alphabet also have numerical values which are used to write numbers, as explained in section ??.

Transcription	Name	Arabic	IPA
ā	anā	ا	[a:]
ʾ	amam	ء	[ʔ]
b	bar	ب	[b]
p	pī	پ	[p]
t	tir	ت	[t]
ṣ	sam	ث	[s]
c	cā	ج	[dʒ]
ç	çī	چ	[tʃ]
ḥ	ḥā	ح	[h]
x	xav	خ	[h]
d	dav	د	[d]
z̄	zav	ذ	[z]
r	ran	ر	[r]
z	zan	ز	[z]
j	jī	ژ	[ʒ]

s	sir	س	[s]
ş	şir	ش	[ʃ]
ş	şad	ص	[s]
z	žad	ض	[d]
t̤	t̤ī	ط	[t]
z̤	z̤ī	ظ	[z]
ˆ	ˆī	ع	[ʔ]
g̣	g̣ī	غ	[g]
f	fīn	ف	[f]
q	qīn	ق	[k]
k	kin	ك	[c]
g	gī	گ	[ʒ]
ñ	gim	ڭ	[ɲ]
l	lā	ل	[l] [ɫ]
m	mā	م	[m]
n	nā	ن	[n]
ū, v	var	و	[u:] [v]
ä, h	hir	ه	[a] [h]
ī, y	yam	ی	[i:] [j]

Table 1: Bāla'y-balan alphabet

There are several other additional orthographic devices used in Bāla'y-balan, including diacritic marks used to show the presence of a short vowel following a consonant. In table ??, diacritics are shown in conjunction with the letter ف, except **qam**, which may only appear above the letter ʌ.

Transcription	Name	Arabic	IPA
ā	qam	آ	[a:]
-	qaqnam	فّ	-
-	ˆazam	فّ	-
a	kavam	فَا	[a]

u	cumam	فُ	[u]
i	şiyam	فِ	[i]

Table 2: Bāla'y-balan diacritics

## Vowels

1. In word-initial position, the letter ʾ does not itself have a vowel sound; instead it is a glottal stop that must be accompanied by a long or short vowel marker as explained in the following points. In practice, the short vowel diacritics are often implied rather than written in Arabic, Persian and Turkish, although Muhyî was diligent about providing diacritics when writing Bāla'y-balan.
2. In word-initial position, [a:] is represented by ʾ with the horizontal **qam** diacritic: ʾ̄. In medial and word-final positions, ā is written with a plain ʾ and a **kavam** diacritic above the preceding consonant.
3. In word-initial position, [u:] is represented by the digraph ʾو. In medial and word-final positions, ū is written with a plain و and a **cumam** diacritic above the preceding consonant.
4. In word-initial position, [i:] is represented by the digraph ʾى. In medial and word-final positions, ī is written with a plain ى and a **şiyam** diacritic below the preceding consonant.
5. Bāla'y-balan's short vowels, [a], [u] and [i], are indicated only through the use of the three diacritics, **kavam**, **cumam** and **şiyam**. In word-initial position, these diacritics are placed above or below the letter ʾ. In medial position, the diacritics are placed above or below the consonant that precedes the vowel. In figure ??, **kavam** is used to indicate long and short vowels.<sup>8</sup> زَاتَ يَوْكَشَا وَ حَاتَ يَيْكَشَا.<sup>9</sup> Word-

<sup>8</sup>Note that in *Kitāb-ı Bāleybelen*, Muhyî often wrote Bāla'y-balan in red ink and Ottoman Turkish in black. In this example, however, diacritic marks for Bāla'y-balan are, nevertheless, written in black.

<sup>9</sup>Koç transcribes these as *zāte'y-vekeşâ ve hâte'y-bekeşâ*, which shows a different reading of the



final [a] is indicated by a ◦ and will be transcribed here by ä. Short [u] and [i] do not occur word-finally in Bāla'y-balan. A suffix which consists of a single short vowel is marked by the addition of a diacritic as in the case of the -a suffix on zāt and ḥāt in the example above.



Figure 1: zāta'y-a-vkaṣā ve ḥāta'y-a-bkaṣā

6. The <sup>ʿ</sup>azam diacritic is used to indicate that a consonant has no following vowel.

## Consonants

1. The **qaqnam** diacritic indicates that a consonant should be doubled; except in the case of affixation, Bāla'y-balan does not allow two identical consonants to be written side-by-side.

## Syllables

1. Bāla'y-balan allows the following syllable: V, VC, CV, CVC, CVCC.<sup>10</sup> Open CV syllables are sometimes transformed into VC syllables by the addition of the definite article y- as described in section ???. Short or long vowel length is permissible in all syllable types. Syllables with two final consonants are rare but possible: **maqḍ** 'sausage'; **madr** 'biol. sage'.<sup>11</sup>

definite article and the first syllable in each of the following nouns. The text, especially in the second of the two compounds, would seem to support my reading. See the discussion of <sup>ʿ</sup>azam in point ??? and section ???.

<sup>10</sup>Initial vowels are preceded by a glottal stop ʾ in writing.

<sup>11</sup>Note that the **qaqnam** diacritic indicates a doubled consonant which is split between two syllables.

2. Two vowels may not appear in sequence, and in the case that affixation should cause two vowels to occur side-by-side, Bāla'y-balan will either:
  - a) eliminate one of the vowels;
  - b) insert a buffer consonant (often ' or y).

### 3 Morphology

Bāla'y-balan is an agglutinating language which makes heavy use of prefixes, suffixes, circumfixes, vowel lengthening and compounding to create words from noun or verb roots. A number of suffixes in Bāla'y-balan are characterised by being equally valid as prefixes as they are as suffixes, although it is still only a minority that function in this manner.

Nouns and pronouns in Bāla'y-balan are marked with the following cases: nominative, accusative, ablative, dative, locative and instrumental; each of these may in turn be combined with a possessed case. Bāla'y-balan cases follow the meanings generally used in classical grammar: nominative (subject of verb); accusative (object of verb); ablative (direction from); dative (direction towards); locative (position at); instrumental (performed with). Nouns and pronouns may also be inflected for number by the addition of a plural suffix. Nouns and pronouns are not marked for gender.

#### 3.1 Pronouns

Bāla'y-balan has six pronouns, which in turn have a complex declension for case. In table ??, the two root columns indicate the roots to which suffixes in table ?? may be applied. There are short and long roots for each pronoun. The enclitic may be attached to a verb in lieu of a pronominal object in the accusative or dative case. The possessed enclitics, which are attached to nouns to indicate possession, are discussed below (see table ??).

Table ?? shows pronoun declension in Bāla'y-balan. The symbols N, L and S indicate the root to which the suffix may be attached: (N)ominative; (L)ong root; and (S)hort root. The accusative suffix -ī requires the buffer -b- after roots

Person	Nominative	Root		
		Short	Long	Enclitic
1st sg.	nav	-na-	-nav-	-na
2nd sg.	gav	-ga-	-gav-	-ka
3rd sg.	ra/rā	-ra-	-rā-	-ra/-ū
1st pl.	navā	-nā-	-navā-	-nā
2nd pl.	gavā	-gā-	-gavā-	-kā
3rd pl.	rayā/rāyā	-rayā-	-rāyā-	-rayā

Table 3: Pronouns

ending in a vowel. There are a number of suffixes which have multiple meanings; the prefix **ba-**, for example, may indicate the dative, locative or instrumental cases.

Case	Form	Example
Nominative	see table ??	nav ‘I’
Accusative	L/S-rā	narā ‘me’
	L-(b)i	rābī ‘him’
Ablative	fa-N	fanav ‘from me’
	L-fa	navfa ‘from me’
Dative	L/S-mī	namī ‘to me’
	L/S-rā	rayārā ‘to them’
	ba-N	banavā ‘to us’
	bayā-N	bayāgavā ‘to you (pl)’
Locative	ba-N	bagav ‘on you (sg)’
	da-N	darā ‘on her’
	N-ba	gavāda ‘on us’
	N-da	rāyāda ‘on them’
Instrumental	N-na	gavna ‘with you (sg)’
	N-mī	navmī ‘with me’
	ba-N	bagavā ‘with us’

Table 4: Pronominal case suffixes

## 3.2 Nouns

### Plural

The Bāla'y-balan plural is created by the addition of the suffix -ā: نِو *niv* 'flower' and نِوَا *nivā* 'flowers'. When the base noun already ends with a -ā, then -y- is added as a buffer between the two vowels. When the base noun ends in the vowel َ [a], then the long ā is added, and the َ is vocalised with its consonantal value [h]: ظفه *zafa* 'book', ظفها *zafahā*.

### Accusative

A noun may be placed in accusative case by the addition of the suffix -rā. This may be added to both singular and plural nouns: شَمْسَا نِوَارَا *Ṣamsā nivārā* 'They smelled the flowers'.

## 3.3 Possession

Possessive relationship in Bāla'y-balan are indicated in two very different ways depending on whether the possessor is a pronoun or a noun. Enclitic pronouns are used in Bāla'y-balan to show that a noun is possessed by a pronoun. These enclitic suffixes are declined for person and for certain cases (that possessed predicates have a special form different from both the nominative and accusative). Possessed nouns in the accusative, instrumental, ablative, dative and locative cases are declined identically. For possession by a noun, the appropriate 3rd person, either singular or plural, is employed.

## 3.4 Genitive Constructs

The Bāla'y-balan genitive construct is widely used to show a relationship between two nouns. The construct has two base forms, definite and indefinite, as well as a combined form. In all cases, the governing (possessed) noun appears

first while the modifying (possessor) noun follows. Note that the genitive construct has uses beyond showing a simple possessive relationship between two nouns, and is often found to describe an action upon a noun by using a gerun as the governing noun: **navama’y-zunā** ‘an updating of the books’ from **navam** ‘to renew, update’ and **zun** ‘register; account’. It can also be used to attach a modifying adjective to a noun: **yi-qsama’y-hinam** ‘the fifth part’ from **qisam** ‘number’ and **hinam** ‘fifth’.

## Indefinite

When the modifying noun is indefinite, the governing noun takes the suffix **-a**: **av’a gīr** ‘dog of hunting > hunting dog’. The indefinite genitive suffix is normally written with the **kavam** diacritic. However, if the noun ends with the letter **ṣ**, an **amam** is attached instead. Likewise, if the noun ends in a long vowel, the buffer consonant **-y-** is used to separate the two vowels: **subāya dal** ‘water of a sea > sea water’.

**dara zar** ‘mother of a woman > mother-in-law’.

## Definite

In a definite genitive construct, the definite article **y-** is additionally attached to the noun that it marks. The definite article can also be attached to the governing noun to make the entire construct definite, as in **yi-qsama’y-hinam** above. See section ?? for a full treatment of the definite article.

Person	Nominative	Pred.	Other
1st sg.	-al/-ab/-ad/-nav/-an	-al	-al
2nd sg.	-ag/-nuv	-ga	-ag
3rd sg.	-ī/-av/-rā/-ra <sup>12</sup>	-ī	-an
1st pl.	-lā	-alā	-alā
2nd pl.	-agā/-ūyā	-gā	-agā

<sup>12</sup>After plurals, the third-person singular suffixes **ī** and **-av** require the buffer consonant **-b-**: **-bī** and **-bav**.

3rd pl.	-iyā/-avā/-rāyā <sup>13</sup>	-yā	-anā
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Table 5: Suffixes of possession

### 3.5 Demonstratives

	Noun	Adjective
This	rā	rā
That	gī	vā

Table 6: Bāla'y-balan demonstratives

### 3.6 Passive

p.169 kafam = demek, kāfam = denilmek

### 3.7 Definite and Indefinite Nouns

p.99 -ā indefinite ya- definite

<sup>13</sup>After plurals, the suffix -avā loses the initial vowel: -vā.

## 3.8 Predicates

present predicate suffix (after possessed nouns only??) -ar -> see p. 98

## 4 Syntax

### 4.1 Definite Article

1. In a definite genitive construct, the definite article *y* is placed before the noun that it marks. In *Bāla'y-balan* the article is attached directly to the noun, while in transcription, a dash will be used to separate the two.
2. There is disagreement on how the article should be formed in certain instances. According to Koç, the article is *y* when following a word ending in a vowel or preceding a noun beginning in a vowel: *y-anā*. Elsewhere, the article requires a buffer vowel between it and its noun: *ya-bar*.

The original manuscript, however, suggests that the rules are somewhat more complex. The main difference is that the article absorbs the first vowel from nouns with an open first syllable. The steps for selecting the appropriate form for an article in *Bāla'y-balan* can be summarised as:

- a) if the noun starts with a vowel, no buffer is necessary
- b) if there is *not* a vowel immediately preceding the article, use a buffer vowel<sup>14</sup>
- c) if the noun consists of a single syllable, no buffer is necessary
- d) if the noun starts with a closed syllable, no buffer is necessary
- e) use a buffer vowel

If the buffer vowel is necessary, the first syllable of the noun loses a short vowel, which will have been represented by a diacritic, and that same

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<sup>14</sup>The presence of a preceding vowel does *not* mean that there will not be a buffer vowel.

diacritic is placed over the y-, giving it the form ya-, yu- or yi-.<sup>15</sup> *In the case of a long vowel, the diacritic is reduplicated in both the article, which will have a short vowel, and the first syllable of the noun, which will retain its long vowel.*

The following examples from a single passage in *Kitâb-ı Bâleybelen* demonstrate the application of these rules.<sup>16</sup> Koç does not follow this pattern, preferring y- in all cases except ya'ḥṣenâ, but no explanation is given for this deviation.<sup>17</sup>

a) رَگُوزَاوُ يُنْشَا  
ra-givzāva'yū-nṣā

b) فَمِيمَ يُمَفْنَا  
fā-mīmā'y-mafnā

c) أ يَنْفَمُ  
a ya-nfam

d) جَامَ يَنْشَنَا أ يَخْشَنَا  
cāma'y-nanṣanā a ya'xṣanā

e) رَ يَكْرَفْنَا رَايَا يَعْشَنَا  
rā'y-karfanā rāyā ya-ṣanā

## 5 Numerals

### 5.1 Cardinals

Numbers in Bāla'y-balan are based on the decimal system as in Arabic, Persian and Turkish.

<sup>15</sup>Note that the first syllable in *balan* is closed, so \*bāla'ya-blan is not the correct form of Bāla'y-balan.

<sup>16</sup>All diacritics are from the original: *Kitâb-ı Bâleybelen*.

<sup>17</sup>Page 188.



1	<b>ad</b>	10	<b>yā</b>
2	<b>baz</b>	20	<b>kar</b>
3	<b>cil</b>	30	<b>liṣ</b>
4	<b>dum</b>	40	<b>mud</b>
5	<b>hin</b>	50	<b>nih</b>
6	<b>vus</b>	60	<b>sav</b>
7	<b>zā</b>	70	<b>ʿaz</b>
8	<b>ḥī</b>	80	<b>fī</b>
9	<b>hid</b>	90	<b>ṭay</b>
0	<b>baḥlā</b>	100	<b>qā</b>
		1000	<b>ḡan</b>

Table 7: Bāla’y-balan numbers

A few of the two-digit numbers have alternate forms: 40 **mud** or **mut**; 60 **sav**, **siv**, **suv**, **sax** or **sux**; 90 **ṭay** or **ṭī**.

The 10 digits can be combined to create larger numbers although they are not always arranged in the order of most to least significance. For numbers between 11 and 101, the numbers 1 through 9 precede the numbers 10 through 100: **hidyā** ‘nine-ten’; **bazkar** ‘two-twenty’. Compare these to: **qā adyā** ‘hundred-one-ten’; **qā dumnih** ‘hundred-four-fifty’. For the number 101, both orderings are possible: **adqā** = **qa’ad** ‘one-hundred’. The reversed form may be used when using multiples of 10 plus 100: **qabaz** = **bazqā** ‘twenty-hundred’.<sup>18</sup>

Most digits have shortened forms used in compounds, fractions and ordinals that are created by dropping the final consonant. Shortened forms are possible for the numbers 11 through 17: **adyā** = **ayā** 11; **bazyā** = **bayā** 12; **cilyā** = **ciyā** 13; **dumyā** = **duyā** 14; **hinyā** = **hiyā** 15; **vusyā** = **vuyā** 17; **zāyā** = **zayā** 1; **ḥiyā** 18; **hidyā** 19. This pattern repeats itself for 21 through 27, 31 through 37 and so on. In the rare case, of inversion and multiples of 10, reduced forms are also possible: **yaqā** 110; **kaqā** 120.

Hundreds are formed by adding the multiplier before **qā** 100: **cilqā** ‘three-hundred’; **vusqā zāliṣ** ‘six-hundred-seven-thirty’. Again, shortened forms are possible for the hundreds, although in this case from 200 to 800: **bazqā** = **baqā**

<sup>18</sup>Note that **qā** can lose its long vowel in compounds.

200; **cilqā** = **ciqā** 300; **dumqā** = **duqā** 400; **hinqā** = **hiqā** 500; **vusqā** = **vuqā** 600; **zāqā** = **zaqā** 700; **ḥīqā** = **ḥaqā** 800; **hidqā** 900.<sup>19</sup>

Thousands are formed in the same manner as the hundreds, and shortened forms : **cilḡan** = **ciḡan** ‘three-thousand’; **vusḡan ḥīqā hifi** ‘six-thousand-eight-hundred-five-eighty’. Thousands and hundreds may be combined for larger numbers: **dukar ḡan qā ciṭay** ‘four-twenty-thousand-hundred-three-ninety’ 24,193. A shortened form, **ḡa**, may be used in the place of **ḡan**: **ḡanad** = **ḡa’ad** 1,001; **ḡanbaz** = **ḡabaz** 1,002.

Other numeral orders are possible when they do not produce ambiguity: **ciyā qaḡan** ‘three-ten-hundred-one thousand’ 1,113. Contrast this with **qā ciyā ḡan** ‘hundred-three-ten-thousand’ 113,000.

## 5.2 Fractions

Fractions are formed in several different manners. The standard means is to separate the numerator from the denominator with the prefixes **da** or **fa**: **ad facil** ‘ $\frac{1}{3}$ ’. It is also possible to omit the prefix in these constructs and use simple juxtaposition: **adcil**. The shortened digits may also be used in the numerator: **acil**. Finally, it is also possible to reverse the order of the numerator and denominator: **cilad**. This would imply that in Bāla’y-balan, it is not possible to express improper fractions, such as  $\frac{3}{2}$ , since the denominator is always assumed to be larger of the two numbers in a fraction statement. Therefore **dumcil** would be interpreted as ‘ $\frac{3}{4}$ ’ rather than ‘ $\frac{1}{3}$ ’, which would be stated as **ad ad facil** ‘ $1 \frac{1}{3}$ ’.

## 5.3 Ordinals

Ordinals can be regularly formed with the **-(y)am** suffix attached to the last element in the number: **adam** ‘first’; **yāyam** ‘tenth’; **qāyam** ‘hundredth’. With certain single digit ordinals, the suffix **-am** can optionally be fixed to the first

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<sup>19</sup>The number **hid** has no reduced form in Bāla’y-balan.

syllable of the number; others have irregular forms: **ad + am > am**<sup>20</sup>; **baz + am > bam**; **cil + am > cam**; **dum + am > dam**; **hin + am > ham**; **vus + am > vam**; **zā + am > zam**; **hī + am > ham**; **hid + am > hidam**.

## 5.4 Distributives

Distributive nouns can be formed in Bāla’y-balan by replacing the vowel of the last syllable in a number with ā: **ād** ‘one each’; **ḡān** ‘a thousand each’.

Distributive adjectives are formed in the same manner with an additional suffix -i.<sup>21</sup> A y is inserted between a word-final vowel and the suffix -i: **يَايَ أَوْرَ** *yāyi avar* ‘a hundred horses each’.

Using reduplication, adverbial constructs such as **bazābaz** ‘two-by-two’ can also be formed. Note that when the numeral ends in a long vowel, the first loses its length and a buffer v is used: **qā + v + qā > qavāqā** ‘a hundred at a time’.

## 5.5 Abjad

Each base letter<sup>22</sup> of the Bāla’y-balan alphabet has a numerical value which is used to write numbers. The system, in Arabic *abjad*, completely replaces the standard Indic digits which are regularly used in languages which use the Arabic alphabet.<sup>23</sup>

In *Kitāb-ı Bāleybelen*, Muhyî also presented variant characters to replace the standard letters for writing Bāla’y-balan’s numbers. There is a one-to-one relationship between the new characters and the standard Arabic letters, so it is possible that these symbols could have additionally been used to write Bāla’y-

<sup>20</sup>Note that vowel-initial words are considered to start with a glottal stop represented by the letter **anā**, so combining **أ** with the suffix **ي** produces **أَي**.

<sup>21</sup>The suffix is written with a **ṣiyam** diacritic.

<sup>22</sup>The base letters are only those found in the Arabic alphabet and exclude the additional forms used for Persian and Ottoman Turkish. Persian letters take the value of the original letter.

<sup>23</sup>The Indic numbers are: ०, १, २, ३, ४, ५, ६, ७, ८, ९.

balan.<sup>24</sup> Bāla’y-balan’s numerical symbols are in fact partially copies of Arabic’s Indic digits (seven standard forms and two variants used in Persian: ۴ and ۵) and one letter (ظ). The remainder are Muhyî’s own invention. There is some precedence for alphabet creation at the time; Koç mentions that a contemporary sufi is said to have written a “strange tongue” in an “unusual alphabet”.<sup>25</sup> The work in question, however, is lost, and the new characters in *Kitāb-ı Bāleybelen* are only used numerically.

ا	ب	ج	د	ه	و	ز	ح	ط	
۱	۲	۳		۵	۶			۹	
1	2	3	4	5	6	7	8	9	
ی	ك	ل	م	ن	س	ع	ف	ص	
						۷	۸		
10	20	30	40	50	60	70	80	90	
ق	ر	ش	ت	ث	خ	ذ	ض	ظ	غ
			۴	۵				ط	
100	200	300	400	500	600	700	800	900	1000

Table 8: *Abjad* values in Bāla’y-balan

Numbers 1999 and below are formed from the *Abjad* symbols by arranging them in a descending order: ه ش غ (1000-300-5) = 1305.<sup>26</sup> It should be noted that despite the Arabic alphabet being read right-to-left, the highest order digits in Bāla’y-balan numbers still appear to the left of lower order numbers.

For numbers in the thousands, Bāla’y-balan suffers from the fact that غ always equals 1000 and is not used as a thousand marker: ج ن ظ غ س ر (200-60-1000-900-50-3) = 261,953. Muhyî was aware of this difficulty and announced that “200,000 is written 200 and 60,000 is written 60”, with context differenti-

<sup>24</sup>Table ?? is currently incomplete as many glyphs are not available. Consequently, I will use the Arabic alphabet in all examples.

<sup>25</sup>See Koç, *Bāleybelen*, 53-54.

<sup>26</sup>Under normal circumstances the Arabic letters should be joined as normal; however the symbols Muhyî devised for his numbering system do *not* connect, so they will appear as such in this document.

ating between the number which are and are not in the thousands. He does not, however, provide the means of writing numbers such as 2,000; the most reasonable assumption would be غب (2-1000), but this is not stated.

## 6 Glossary