



## ISHARMONY

Here, Modern Uyghur<sup>2</sup> data are entered into the discussion, since this language on the one hand is relatively conservative with regard to suffix creation and labial harmony development but on the other hand is innovative with regard to phonological neutralization, both of which characteristics contribute to a considerable degree of apparent disharmony. Data taken from other Turkic languages serve to illustrate developmental tendencies and scopes.

## 1. Harmonic Principles

1.1. Vowel Phoneme Distinctions. The vowel phonemes of Standard Uyghur are divided into two identically structured main groups that are distinct on the basis of the feature [Back]. Each of these two groups has three height levels and is subdivided into two vertical columns that are distinct on the basis of the feature [Round]. Furthermore, the phonemes have binary quantitative distinction.<sup>3</sup>

## (1) Modern Uyghur vowel phonemes (extended inventory)

[-Back]				[+Back]			
[-Round]		[+Round]		[-Round]		[+Round]	
[-Long]	[+Long]	[-Long]	[+Long]	[-Long]	[+Long]	[-Long]	[+Long]
i	ii	ü	üü	ɪ	ɪɪ	u	uu
(e)	(ee)	ö	öö	(ɣ)	(ɣɣ)	o	oo
ä	ää			a	aa		

<sup>2</sup> Modern Uyghur (formerly "East(ern) Turki") serves as a first-learned language primarily in China's Xinjiang Uyghur Autonomous Region (formerly "Eastern Turkestan" or "Chinese Turkestan"), to a lesser extent in the neighboring Soviet republics, Afghanistan and Outer Mongolia. In Xinjiang, it also serves as an official lingua franca among many of those non-Uyghur inhabitants whose first-learned language is not Chinese. In the following, "Modern Standard Uyghur" (hereafter "(Standard) Uyghur") collectively refers to the standard "literary" variety of China and of the Soviet Union, unless specified otherwise.

<sup>3</sup> (Hahn 1991, forthcoming, Hašim & Mixri 1986, Polat 1984.) None of the modern orthographies observes this underlying quantitative distinction; e.g., /tär/ = tär 'sweat' vs. /täär/ = tär 'complexion'. (Although its word-initial status remains debatable, a glottal stop (/ʔ/ = ')) is here assumed to be phonemic in all positions.)



gmented by means of  
 ≠ /ɣɣ/.<sup>4</sup> (In native  
 nt of any unrounded  
 & Meng 1982: 59; see  
 have been augmented  
 he distinction in the  
 in what appear to be

interpart to /e(e)/ to  
 hically represented as  
 ur *guyše* 'commune'  
 ussian *universitet* →  
 iot \**uniwersitet+tä*)

a roots may contain  
 gger off front-vocalic  
 [~[a] may differ pho-  
 : [ha:l] 'condition' →  
*dal* = [dɔɪ] 'branch'  
 at in this case front-  
 cent consonant (i.e.,  
 east regarding initial  
*üp* = [kulüp] 'club'),  
 rs across other kinds  
 fixation; e.g., Arabic  
*ra* 'his tomb' (Lewis  
 culture' (cf. Uyghur  
*ti* (not \**ziraati*) 'its  
 o be to assume loan-  
 front-vocalically like  
 /ziraa'at/ etc. (Al-  
 / ≠ /a(a)/ as /e(e)/  
 ded vowel phonemes  
 and *o* appears to be  
 i, after front /l/, as  
 > /nükuul/ → *nükül*  
 s 'souls' > /nüfuus/  
 nch *rôle* > *rol* 'role'  
 rekori 'its record').

native roots,<sup>6</sup> which appears to represent a secondary development.<sup>7</sup>

In the absence of augmentation and quantitative distinction, the Standard Uyghur vowel phoneme inventory is that shared by all known Turkic languages. It has only two height levels. The mid-level and the low level together constitute a single low level.<sup>8</sup> This basic low-level structure is perfectly symmetrical in conjunction with the high-level structure in an inventory each of whose three categorial criteria rely upon binary distinction.

(2) Modern Uyghur vowel phonemes (basic inventory)

	[-Back]		[+Back]	
	[-Round]	[+Round]	[-Round]	[+Round]
[-Low]	i	ü	ɪ	u
[+Low]	ä	ö	a	o

It is this simple inventory and its distinctive feature categorization that constitutes the basis for Turkic suffix vowel assignment.

1.2. Harmonic Processes. In all Turkic languages, native morphological derivation and syntactic function marking rely solely upon postpositive devices, namely upon the adding of postpositions, compound elements, enclitics and suffixes to roots and stems. With regard to vocalic structure, postpositions, compound elements and enclitics are discrete units, while suffixes must be adapted to the roots and stems to which they are attached

<sup>6</sup> For example, in Qazaq (Kazakh), native (and Common Turkic) /ä/ (→ *e* = [e]) is distinct from /ä/ (→ *ä* = [æ]; alternatively /e/ ≠ /ä/). The latter occurs in a few kinship terms, otherwise in loanwords; e.g., Arabic *hawā* > *āwa* 'air', Farsi *har* > *ār* 'each', Russian *pal'to* > *palto* ~ [p'ælte] 'overcoat' (Geng & Li 1985: 205, 207, 215). In Azerbaijani, this distinction exists within the native lexicon; e.g., *el* 'nation' vs. *äl* 'hand' (Amirpur-Ahrandjani 1971: 46-47, Poppe 1960: 105).

<sup>7</sup> Poppe (1960: 102-106) assumes that the development of mid-level /e/ took place in both Mongolic and Turkic after the separation of these two Altaic branches, since /e/ ≠ /ä/ distinctions do not correspond between them. He considers it possible that /e/ was derived from /ä/ under the influence of an adjacent palatal and a following (subsequently deleted) vowel.

<sup>8</sup> Based upon the commonly held assumption that [+Low] is marked, and taking into account Uyghur vowel raising as a manifestation of reduction in light syllables (i.e., [+Low] → [-Low]), mid- and low-level vowels are here combined under the label [+Low] rather than under the label [-High].

and with which they form units that upon the basis of their phonological integrity are defined as "words." Suffix adaptation is characteristically based upon harmonic principles that determine feature value assignation to all vowels and to certain consonants. Harmonically responsive segments are assumed to be derived from archiphonemes (i.e., underspecified phonemes) and as such are here and elsewhere represented by means of capital letters. Vocalic archiphonemes are minimally distinct in height. Harmonic backness value assignation applies mandatorily and uniformly during suffixation in all Turkic languages, while harmonic roundness assignation is language-specific regarding applicability and conditioning.

**1.2.1. Palato-Velar Harmony.** The term "palato-velar harmony" denotes the concomitance of vocalic backness harmony with one of several backness-conditioned consonantal harmony variants. Palato-velar harmony manifests itself in virtually all known Turkic languages. More precisely stated, it applies consistently in all modern spoken Turkic languages (with a few exceptions, such as certain varieties of highly Iranized urban Uzbek) and in most modern written Turkic languages. Certain remnants of it survive in those varieties that have been regarded as having lost harmony. Palato-velar harmony is attestable in all known pre-modern Turkic languages as far back as in the varieties recorded in the earliest extant Early Written Turkic (i.e., Kōk Turkic and Old Uyghur) documents. Distinctions both among vowel symbols and among certain consonant symbols serve as clear indicators in Old Uyghur manuscripts from as early as the ninth century C.E. (Gabain 1974, Nasilov 1963). Categorial distinction among vowel-carrying consonant symbols has been observed in the "runic" Turkic epitaph inscriptions of the Orkhon and Yenessei areas, which go back to the seventh century C.E. and possibly much earlier. These orthographic differentiations are understood as indicating the existence of harmonic backness distinction in the earliest known varieties of Turkic (Abduraxmānov & Rustamov 1982, Ajudarov 1971, Erimer 1969, Gabain 1959, 1974, Malov 1951, Meyer 1965). There ought to be little doubt about this distinction being vocalic, since rounded back and front vowels are distinguished also in the absence of vowel carriers, and vocalic backness harmony is attestable only some one hundred years later. If and to what degree this distinction was also consonantal (namely affecting *b*, *d*~*t*, *s*, *n*, *l*, *r*, *g*~*k* and *y*) remains to be determined.

**1.2.1.1. Palato-Velar Vowel Harmony.** As mentioned earlier, in the Turkic languages at least height value is predetermined in vocalic

archiphonemes that u non-labial /i/ ~ /ɪ/, l /a/, labial /ō/ ~ /o/). could be argued to be languages in which lal Vocalic archiphoneme /I/, /U/, /A/, /O/; e. /u/, /A/ → /ä/ ~ /a/ in which a suffix may dergo delabialization v /I/ → /i/ ~ /ɪ/ ~ /ü /ö/ ~ /o/, /O/ → /ō/ superstratal disharmon vowels within and not l other in backness value

(3) Palato-velar v

# C<sub>l</sub>

**1.2.1.2. Palato-Velar consonantal harmony** r the backness value of this applies to all cons western Turkic languag (Amirpur-Ahrandjani 1 velars associate with l counterparts associate /k/). In most other Tu ization may be encount tion of consonantal har sonants, namely betwe /N/).<sup>9</sup>

(4) Palato-velar cor

[<sup>C</sup>αBack] % [α]

<sup>9</sup> A back nasal pair (summed included in the h with back vowels and uv

archiphonemes that undergo backness harmony assignation: high /I/ (→ non-labial /i/ ~ /ɪ/, labial /ü/ ~ /u/) and low /A/ (→ non-labial /ä/ ~ /a/, labial /ö/ ~ /o/). Within a language-specific, synchronic context, this could be argued to be the case in languages such as Turkish, namely in languages in which labial harmony applies consistently to all high vowels. Vocalic archiphonemes may have predetermined roundness value as well: /I/, /U/, /A/, /O/; e.g., Standard Uyghur /I/ → /i/ ~ /ɪ/, /U/ → /ü/ ~ /u/, /A/ → /ä/ ~ /a/. This is most clearly evident in Turkic languages in which a suffix may have an inherently round vowel that does not undergo delabialization where labial harmony applies; e.g., Qirghiz (Kirghiz) /I/ → /i/ ~ /ɪ/ ~ /ü/ ~ /u/, /U/ → /ü/ ~ /u/, /A/ → /ä/ ~ /a/ ~ /ö/ ~ /o/, /O/ → /ö/ ~ /o/. Fundamentally, namely in the absence of superstratal disharmonization and root-internally tolerated disharmony, all vowels within and not beyond the boundaries of a word (#) agree with each other in backness value:

## (3) Palato-velar vowel harmony

$$\# C_0 [\alpha \overset{V}{\text{Back}}] (C_1 [\alpha \overset{V}{\text{Back}}])_0 C_0 \#$$

**1.2.1.2. Palato-Velar Consonant Harmony.** Within native contexts, consonantal harmony requires certain consonantal phonemes to conform to the backness value of the assigned vocalism within a word. In Karaim, this applies to all consonants (Musaev 1966, Pritsak 1959a). In South-western Turkic languages, such as Gagauz (Pokrovskaja 1966), Azerbaijani (Amirpur-Ahrandjani 1971, Gadžieva 1966) and Western Turkish dialects, velars associate with back vowels, while their palatal or palato-alveolar counterparts associate with front vowels (/l(ʰ)/ ≠ /ʎ/, /ǰ/ ≠ /g/, /k/ ≠ /kʰ/). In most other Turkic languages (including Modern Uyghur), palatalization may be encountered as a secondary feature, the basic manifestation of consonantal harmony being harmonic distinction among back consonants, namely between velars and uvulars (/g/ ≠ /g/, /k/ ≠ /q/, /ŋ/ ≠ /ŋ/).<sup>9</sup>

## (4) Palato-velar consonant harmony

$$[\overset{C}{\alpha \text{Back}}] \% [\overset{V}{\alpha \text{Back}}] \quad \text{or} \quad [-\overset{C}{\alpha \text{High}}] \% [\overset{V}{\alpha \text{Back}}]$$

<sup>9</sup> A back nasal pair (always *ŋ* in the official orthographies) is here assumed included in the harmony-sensitive series. (The allophone [ɳ] occurs with back vowels and uvulars.)

Under (5), regular manifestations of palato-velar harmony are illustrated by means of corresponding morphemic forms in Turkish and Qazaq (Geng & Li 1985, Kenesbaev and Karaševa 1966, Xinjiang Weiwuer Zizhiq Wu Wenzi Gongzuo Weiyuanhui 1983).

(5) Regularly applying palato-velar harmony

Turkish	Qazaq	
#ğiy-im+i+n+dän#	#kiy-im+i+n+nän#	'from his clothing'
#kız+ı+n+dan#	#qız+ı+n+nan#	'from his daughter'
#äšäk+lär+imiz+ä#	#äsäk+tär+imiz+gä#	'to our donkeys'
#ayak+lar+ımız+a#	#ayaq+tar+ımız+ca#	'to our feet'

1.2.2. Labial Vowel Harmony. The term "labial (vowel) harmony" collectively denotes all variants of a law that requires word-internal vocalic roundness agreement. This type of harmonic agreement shares its domain of application partially<sup>10</sup> or entirely with palato-velar harmony, but usually does not exceed it.<sup>11</sup> Although the application of labial harmony in its various forms tends to be more prevalent in one Turkic subgroup than in another, and the possibility that language contacts account for its spread

<sup>10</sup> Menges (1947: 61) describes a Qaraqalpaq dialect in which labial harmony does not apply beyond the first controlled syllable; e.g., *köllörindä* (cf. Qirghiz *köldöründö*) 'in its lakes', *tömändägi* (cf. Ili Turki *temändägi* [Zhao & Hašim 1985: 28] ~ *tömöndägi* (cf. Qirghiz *tömöndökü*) '(that) which is (shown) below' ('on the above, on high' [sic.], Menges 1947: 61).

<sup>11</sup> A rare instance of low labial harmony applying in the absence of palato-velar harmony is found in Ili Turki (Hahn 1990, Zhao & Hašim 1985), for example with regard to the collective numerative marker ...*(a)w* ~ ...*(ö)w* (cf. Old Uyghur ...*(ä)gū* ~ ...*(a)gu*, Xinjiang Qazaq ...*(ä)w* ~ ...*(a)w*). In Ili Turki, unrounded non-high vowels are phonetically distinct with regard to backness, while the rounded vowels surface neutralized as medial allophones. Attached to a root whose last vowel is unrounded, the morpheme in question acts like an enclitic in that it remains back-vocalic even after front-vocalic stems (e.g., *beš+aw* 'the five of them together'), but it does respond to labial harmony (e.g., *üč+öw* 'the three of them together'). Another such rare instance is the Turkish attributive marker ...*ki* which acts like a postposition (i.e., does not undergo harmony and voicedness assimilation); e.g., *šimdiki* (not \**šimdigi*) 'current', *yarınki* (not \**yarıngı*) 'tomorrow's'. However, it does respond to front labial influence; e.g., (#*bu##gün##ki##* 'this day's' >) *bugünkü* (not \**bugünki*) 'today's'.

cannot be ruled out, as solely genealogical can be dialectally basally defined languages (Gappariwa 1984, Mixri 1984, Osmanov 1963) and in Qazaq (main types "high labial harmony" discussed in some de

1.2.2.1. High Labial Harmony. This type of harmony is consistently and exclusively analyzed and discussed by Sezer 1982, Croft 1983, Lees 1961, 1963, applies also in other western periphery of Turkic (e.g., Amirpur-Ahlar Azimov et al. 1966, Hahn 1990, Magomedov 1963, Musaeu 1966). Early tendencies towards high labial harmony in Turkic literature, including the 10th century C.E. (Doerfer 1963) as well as in Qypchaq and Karakhanid 18th centuries C.E. (e.g.,

Under (6), this type of harmony (the nearest vowel (usually high) application) is illustrated by cognate forms in which high labial harmony applies.

(6) Extent of high labial

Turkish

#ğöl+ümüz+ün-

#ğöl+lär+imiz+

#koł+umuz+un-

#koł+lar+ımız+

#gün+ümüz+ün-

labial harmony are illustrated in Turkish and Qazaq jiang Weiwuer Zizhiqu

'from his clothing'  
'from his daughter'

'to our donkeys'  
'to our feet'

labial (vowel) harmony"  
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harmony shares its domain  
with labial harmony, but usu-  
ally labial harmony in its  
Turkic subgroup than in  
Qazaq account for its spread

context in which labial har-  
mony is applicable; e.g., *köllörindä*  
f. Ili Turki *temändägi*  
*iz tömöndökü* '(that  
c.)', Menges 1947: 61).  
the absence of palato-  
harmony (Zhao & Hašim 1985),  
the marker ...*(a)w* ~  
Qazaq ...*(ä)w* ~  
phonetically distinct  
surface neutralized as  
vowel is unrounded, the  
; remains back-vocalic  
(e.g. of them together'),  
*w* 'the three of them  
attributive marker  
undergo harmony and  
'current', *yarınki* (not  
front labial influence;  
at *\*bugünki*) 'today's'.

cannot be ruled out, its presence and typology do not appear to be definable as solely genealogically or areally based. Labial harmony and its typology can be dialectally based and can be quite diverse within the same genealogically defined language, as is the case for example in Modern Uyghur (Cheng 1984, Ğappariwa 1980, Hahn 1986: 36-42, Jarring 1933: 67-89, Li 1986, Mixri 1984, Osmanop 1983, Pritsak 1959b, Sadvakasov 1970, 1976, Tenišev 1963) and in Qazaq (Geng & Li 1985: 4, Poppe 1960: 150). So far, the two main types "high labial harmony" and "general labial harmony" have been discussed in some detail in relevant publications.

**1.2.2.1. High Labial Harmony.** The type of labial harmony that consistently and exclusively affects the realization of high vowels has been analyzed and discussed mainly within the context of Turkish (e.g., Clements & Sezer 1982, Crothers & Shibatani 1980, Kardestuncer 1982a, 1982b, 1983, Lees 1961, 1966a, 1966b, Pierce 1966, Zimmer 1967). This type applies also in other Turkic languages, primarily in those used on the western periphery of the Turkic-speaking area, for example in Azerbaijani (e.g., Amirpur-Ahrandjani 1971: 69-73, Gadžieva 1966), Turkmen (e.g., Azimov et al. 1966, Hanser 1977), Gagauz (e.g., Pokrovskaja 1966), Kumyk (e.g., Magomedov 1966), Karachay-Balkar (e.g., Xabičev 1966), Karaim (e.g., Musaev 1966, Pritsak 1959a) and Chulym Turki (Dul'zon 1966). Early tendencies toward this type are evident in medieval Eastern Turkic literature, including the Qarakhanid text *Qutađču bilig* of the eleventh century C.E. (Doerfer 1985: 19-20, Minzu Wenxue Yanjiusuo 1984), as well as in Qypchaq and Ottoman literary works from between the 13th and 18th centuries C.E. (e.g., Doerfer 1985).

Under (6), this type of roundness agreement of every high vowel with the nearest vowel (usually with the immediately preceding vowel in iterative application) is illustrated in the case of Standard Turkish, juxtaposed with cognate forms in Written Qazaq, a language in which no type of labial harmony applies.

(6) Extent of high labial harmony

Turkish	Qazaq	
#ğöl+ümüz+ün#	#köl+imiz+din#	'of our lake'
#ğöl+lär+imiz+ın#	#köl+där+imiz+din#	'of our lakes'
#kol+umuz+un#	#qol+ımız+dın#	'of our arm'
#kol+lär+ımız+ın#	#qol+dar+ımız+dın#	'of our arms'
#ğün+ümüz+ün#	#kün+imiz+din#	'of our day'

#gün+lär+imiz+in#	#kün+där+imiz+dıg#	'of our days'
#kuş+umuz+un#	#qus+ımız+dın#	'of our bird'
#kuş+lar+ımız+ın#	#qus+tar+ımız+dın#	'of our birds'

1.2.2.2. **General Labial Harmony.** In another major type of labial harmony, roundness agreement affects also low vowels under various language-specific constraints. Low labial harmony has been assumed to be a relatively more recent development than is high labial harmony from which it has been traditionally distinguished by means of the label "labial attraction" (e.g., in Menges 1947: 60-64, and Poppe 1959: 675, 1960: 150). A simultaneous rule application treatment has been proposed for Qirghiz (Johnson 1980; see 1.3.).

In this type of labial harmony, high vowels are ordinarily affected consistently. Usually, all low vowels can be labialized as well, except where /a/ is controlled by /u/, which is the case for instance in Qirghiz (e.g., Axmatov 1970, Axmatov et al. 1975, Hebert & Poppe 1963, Hu 1986, Junasaliyev 1966), as illustrated in juxtaposition with Turkish cognates under (7).

(7) Extent of general labial harmony

Qirghiz	Turkish	
#köl+übüz+dön#	#göl+ümüz+dän#	'from our lake'
#köl+dör+übüz+dön#	#göl+lär+imiz+dän#	'from our lakes'
#qoi+ubuz+dan#	#koi+umuz+dan#	'from our arm'
#qoi+dor+ubuz+dan#	#koi+lar+ımız+dan#	'from our arms'
#kün+übüz+dön#	#gün+ümüz+dän#	'from our day'
#kün+dör+übüz+dön#	#gün+lär+imiz+dän#	'from our days'
#kuş+ubuz+dan#	#kuş+umuz+dan#	'from our bird'
#kuş+tar+ıbiz+dan#	#kuş+lar+ımız+dan#	'from our birds'

The same rule applies in Lopnori (which is officially considered a Modern Uyghur dialect)<sup>12</sup> and in certain dialects of Altay (Menges 1947: 60,63,

<sup>12</sup> Ğappariya 1980: 25-26, Hahn 1986: 38, Mixri 1984, Osmanop 1983, Pritsak 1959a: 540, Tenišev 1963: 147-150, Zhao & Zhu 1985: 200-201; e.g., #köl+lör# (cf. Standard Uyghur #köl+lär#) 'lakes', #qoy+lor# (cf. Standard Uyghur #qoy+lar#) '(various) sheep', #üz+zör# (cf. Standard Uyghur #yüz+lär#) 'faces', but #lop++tuq+tar# (cf. Standard Uyghur #lop++luq+lar#) 'people of Lop' (Mixri 1984: 57,59).

Pritsak 1959c: 577-578, a preceding non-high vowel, which, as in its close relative, Common Turkic high-labial harmony is confined to (Juldašev 1966, Poppe 1959, speaking, equal those suffix vowels have been affected by labial harmony. Its category as those in the latter tend to be labialized by a high round vowel; e.g., /u/. However, usually only non-high vowels; e.g., /a/. 1965: 183, Baskakov 1963, tendency toward generalization to front-vocalic sequences, harmony application is found = [ulumθuromoq] '(pre-

1.3. **Formulization.** Labial harmony (Tungusic) and Uralic labial harmony have been widely regarded as a metaphonic or specific rule application has been proposed (e.g., Clemons 1980, Johnson 1980: 93).

It is not intended as a descriptive approach to the definition of the domain of application of regular disharmony, implicitly point toward the direction of the rule, kic, and they throw furt

<sup>13</sup> For instance #bör+lär# 'waters', #tül+lär# 'waters' (Poppe 1959: 676).

<sup>14</sup> For instance #sös+lar# 'if he se

'of our days'

'of our bird'

'of our birds'

major type of labial harmony in various languages is considered to be a relatively common phenomenon which it has been called "labial attraction" (e.g., Johnson 1980: 50). A simultaneous labialization in Qirghiz (Johnson 1980;

is ordinarily affected as well, except where it is not the case in Qirghiz (e.g., Johnson 1963, Hu 1986, Johnson 1980). Turkish cognates

'from our lake'

'from our lakes'

'from our arm'

'from our arms'

'from our day'

'from our days'

'from our bird'

'from our birds'

is considered a Mod-  
Menges 1947: 60,63,

84, Osmanop 1983,  
Zhu 1985: 200-201;  
es', #qoy+lor# (cf.  
zör# (cf. Standard  
Standard Uyghur

Pritsak 1959c: 577-578). In Yakut, low vowels can be labialized only by a preceding non-high, short, rounded vowel.<sup>13</sup> In Bashqir—a language in which, as in its close relative Tatar (Chen & Ilčen 1986, Zakiev 1966), most Common Turkic high- and mid-level vowels have switched levels—low labial harmony is confined to the mid-level and is controlled by non-high vowels (Juldašev 1966, Poppe 1965: 182). Its passive constraints thus, strictly speaking, equal those of high labial harmony, since common Turkic high suffix vowels have been lowered, and low suffix vowels are exempted from labial harmony. Its causative constraints, however, belong to the same category as those in Yakut. In Standard Altay, underlying high vowels tend to be labialized within lexicalized stems only and then only after a high round vowel; e.g., #sülizin# ~ #sülüzün# 'fox' (Pritsak 1959c: 577). However, usually only underlying low vowels are labialized by preceding non-high vowels; e.g., #qol+dor# 'arms', vs. #qol+ı# 'his arm' (Poppe 1965: 183, Baskakov 1966). Certain non-standard varieties of Shor show a tendency toward general labial harmony, but low labialization is restricted to front-vocalic sequences.<sup>14</sup> A rare case of unrestricted general labial harmony application is found in spoken Standard Turkmen; e.g., *ulumıramak* = [ulumθuromoq] '(process of) boasting' (Hanser 1977: 15).

**1.3. Formulization.** Vowel harmony in Altaic (i.e., Turkic, Mongolic and Tungusic) and Uralic (i.e., Finnic, Ugric and Samoyedic) languages has been widely regarded as being generated by means of iteratively applying metaphonic or specificatory rules. In recent years, models for simultaneous rule application have been proposed, such as Clements' autosegmental treatment (e.g., Clements 1976, 1980, Clements & Sezer 1982), and these have been variously rejected within a Ural-Altai context (e.g., Anderson 1980, Johnson 1980: 93-94, Vago 1980b).

It is not intended to enter into any lengthy discussion about various descriptive approaches within the limited scope of this presentation. The definition of the domain of mandatory harmony application and the identification of regular disharmonizing processes and conditions presented here implicitly point toward the consistent application of harmonic rules in Turkic, and they throw further doubt upon the practice of positing disharmony

<sup>13</sup> For instance #börö+lör# 'wolves', #o+lor# 'those', but #uu+lar# 'waters', #tül+lär# 'dreams', #uol+lar# 'sons', #küöl+lär# 'lakes' (Poppe 1959: 676).

<sup>14</sup> For instance #sös+täj# ~ #sös+töj# 'from the word', #kör--zä# ~ #kör--zö# 'if he sees' (Pritsak 1959d: 632).

labels and opaque constituents such as those used particularly in simultaneous application models. *Ipsa facto*, they contribute to the invalidation of hitherto expressed objections to linear application models, at least within a Turkic context.

For the purpose of the present discussion then, it is assumed that Turkic harmony manifests itself by way of feature value assignment rules that operate on a co-occurrence restriction basis and apply progressively, i.e., cyclically, to their own output: an added suffix is assimilated to the nearest relevant segment. Crothers & Shibatani's (1980) basic analysis within a Turkish context is here taken as being fundamental also within a more general Turkic context. In this analysis, morpheme structure constraints and phonetic constraints are assumed to be, by and large, identical co-occurrence restrictions, the former defining well-formed lexical representations, and the latter defining well-formed words (Crothers & Shibatani 1980: 77). Native and fully nativized roots and lexicalized stems have undergone harmonizing processes in this fashion, while phonological adaptation of loanwords as Turkic roots does not include internal harmonic assimilation. All roots are lexicalized fully specified with regard to level, backness and roundness, be they internally harmonic or disharmonic. Only a root- or stem-final syllable is relevant to further harmonization in that it initially determines at least the backness category of the remainder of a word. Suffixes used for free derivation and for syntactic function marking contain segments with archiphonemic representation that undergo feature value assignment rules. This implies a greater degree of abstractness than in Kiparsky's (1973) model in which also vowels in productive suffixes are fully specified in their "least marked" form before they undergo harmonic assimilation.

This model appears to be viable at least within a synchronic context. For example, it allows palato-velar harmony (1.2.1.) and high labial harmony (1.2.2.1.) applying to underlying vowels to be captured within one conflated rule statement, assuming that there are only the two vocalic archiphonemes whose backness and roundness values are to be determined.

(8) Palato-velar harmony and high labial harmony

$$\left[ \begin{array}{c} V \\ \emptyset \text{Back} \\ + \text{High} \\ \emptyset \text{Round} \end{array} \right] \rightarrow \left[ \begin{array}{c} \alpha \text{Back} \\ < \beta \text{Round} > \end{array} \right] / \left[ \begin{array}{c} V \\ \alpha \text{Back} \\ < \beta \text{Round} > \end{array} \right] C_0 \text{ ———}$$

Vowels within roots and lexicalized stems cannot undergo this rule, since they are fully specified, namely have no blanks ( $\emptyset$ ). Alternatively, mor-

pheme boundary spe which would be prob texts suffixes may l /-IjI+ #/<sup>15</sup> discusse

In most Turkic value, while labial h (see 1.2.1. above). T /-čU+ #/<sup>16</sup> for exan its inherent roundne riding', #bar-ču# '(contrast, the vowels < \*/-A#čU+ #/?> : e.g., #āz+ij# 'crusl ("causing to laugh" toxicating' (Hatiboğl assuming iterative r mony (see 1.2.2.2.) non-application of lo labial disharmony.

(9) Johnson's Q

$$V \rightarrow [+ \text{Round}] /$$

1.4. Diachronic I specific data that lal tire Turkic context v comparative and hist

<sup>15</sup> Consistently with the symbols + and - verbals suffix bound. 1991), this has been possible. Further su boundary (#).

<sup>16</sup> Cf. Traditionally -čū ~ -ču; e.g., *kele* 1964: 96).

pheme boundary specifications would have to be incorporated into the rule, which would be problematic, because within contemporary, synchronic contexts suffixes may be disyllabic as a result of contraction (e.g., Turkish /-IjI+#/<sup>15</sup> discussed below).

In most Turkic languages, only the feature [Back] has indeterminate value, while labial harmony involves labialization but not delabialization (see 1.2.1. above). Thus, the vowel in the Qirghiz habitual participial suffix /-čU+#/,<sup>16</sup> for example, undergoes palato-velar harmonization but retains its inherent roundness under all conditions; e.g., #min-čü# '(habitually) riding', #bar-ču# '(habitually) going (and arriving)' (Hu 1986: 121). In contrast, the vowels in the Turkish equivalent /-IjI+#/ (< \*/-A#čI+#/ < \*/-A#čU+#/?) surface in two unrounded and two rounded variants; e.g., #üz+iji# 'crushing', 'overwhelming', #ak-ıjı# 'fluent', #güldür-üjü# ('causing to laugh' =) 'amusing', #uyuştür-üju# ('benumbing' =) 'intoxicating' (Hatiboğlu 1974: 75-76, Lewis 1978: 220). Johnson (1980: 91), assuming iterative rule application, captures Qirghiz general labial harmony (see 1.2.2.2.) within a single labialization rule according to which non-application of low labialization after /u/ constitutes a case of regular labial disharmony.

(9) Johnson's Qirghiz labialization rule

$$V \rightarrow [+Round] / \left[ \begin{array}{c} V \\ \alpha High \\ \beta Back \\ +Round \end{array} \right] C_0 \left[ \begin{array}{c} \gamma High \end{array} \right]$$

Condition:  $(\alpha, \beta, \gamma) \neq (+, +, -)$

**1.4. Diachronic Implications.** Assuming on the basis of language-specific data that labial harmony is a labialization process within the entire Turkic context would be too sweeping a generalization, even though comparative and historical data strongly tempt one to regard labialization

<sup>15</sup> Consistently with Western Turcological conventions (Gabain 1974), the symbols + and - in morphemic representations indicate nominal and verbals suffix boundaries respectively. In this presentation (as in Hahn 1991), this has been extended to final position where further suffixing is possible. Further suffixing is mandatory in the absence of a final word boundary (#).

<sup>16</sup> Cf. Traditionally Written Mongolian imperfect converbial -jü ~ -ju ~ -čü ~ -ču; e.g., *kele-jü* 'saying', *abču* 'taking', (Gabain 1974: 116, Poppe 1964: 96).

of fully specified unrounded phonemes as being an earlier developmental stage whose principle is still underlying. Within a purely Turkish context, for example, such diachronic considerations ought not stand in the way of capturing the utmost degree of abstractness, as that of the archiphonemic Turkish suffix vowel inventory /I/, /A/. In analyzing harmonic systems within purely synchronic contexts, only language-specific domainial constraints, degrees of abstractness and rule statements are relevant.

Within a comparative, diachronic context, a significant implication of the development from specification to underspecification regarding roundness, in conjunction with the identification of historically word- and enclitic-derived suffixes (see 2.1.), is that Turkic suffixization is essentially an abstraction process. If one goes along with Crothers and Shibatani's defense of the permissibility of blanks in harmonic system descriptions (Crothers & Shibatani 1980: 70-72, Shibatani & Crothers 1974: 268), one would have to conclude that this type of affixation, as an essential part of a development from phonological discreteness to phonological dependency, signifies the loss of unconditional feature value specification and thus the evolution of archiphonemes.

Consistently with this conclusion, one would not simply state that an inherently rounded vowel in a word- and clitic-derived suffix has undergone delabialization in a language without labial harmony and still undergoes delabialization where in a labial harmony system non-labial variants are required. Rather, one would have to state that the positive roundness feature value has been deleted and a blank has been created in the course of affixation. For example, in some Turkic languages, the Early Written Turkic aoristic verb form #tur-<sup>o</sup>r# 'stand(s)', 'persist(s)' (Gabain 1974: 126, Lewis 1978: 96, Räsänen 1957: 172-173) has been developed into a literary or categorical statement expression or into a progressive tense marker. In certain languages it developed into an enclitic;<sup>17</sup> e.g., in Troki (Lithuanian) Karaim (Musaev 1966: 264), Western Uyghur ("Yellow Uyghur," Chen & Lei 1985) and Modern Uyghur (\*#tur-<sup>o</sup>r# > /...#dur#/). In other languages, such as Turkish, it developed into a prestressed suffix (Lewis 1978: 96-98, \*#tur-<sup>o</sup>r# > /...++dIr#/).<sup>18</sup> As an enclitic, it undergoes voicedness assimilation but does not undergo harmonic assimilation. As a suffix, it is affixed after stress assignment, but it still undergoes harmonization, surfacing either in two variants (i.e., where labial harmony does not apply) or in four variants

<sup>17</sup> A single word boundary (#) separates a clitic (Kardestuncer 1982b; see 2.4.).

<sup>18</sup> A double suffix boundary separates a prestressed suffix (see 2.4.).

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(10) Enclitic vs.

Uyghur

#gül#du

#?ót#tur

#?ár#du

#?át#tur

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(11) Disharmony

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(i.e., where labial harmony applies to underlying vowels).

(10) Enclitic vs. suffix

Uyghur	Turkish	
#gül#dur#	#gül++dür#	'is (indeed) a flower'
#?ót#tur#	#ót++tur#	'is (indeed) an herb'
#?är#dur#	#är++dir#	'is (indeed) a male'
#?át#tur#	#át++tur#	'is (indeed) a horse'

Recognition of this evolutionary process in conjunction with comparative analyses within a Turkic and generally Altaic context may facilitate and corroborate the identification of words as sources of enclitics and suffixes. This might prove to be beneficial also to language-specific, synchronic analyses, given the fact that suffixes that can be attested as being word-derived tend to be phonologically distinguished from other suffixes.

2. **Regular Disharmony.** The Modern Uyghur harmony system has been described as being inconsistent and thus as occupying in this respect a categorial position somewhere between that of a "harmonic" language, such as Qirghiz, and that of a "non-harmonic" language, such as Uzbek (Kajdarov 1966: 368). Evidently, this view is based solely upon phonetic surface manifestations and variously distorting orthographic conventions. Harmonic processes apply underlyingly in virtually all Turkic language, even though it might be true to say that the system is moderately to highly flawed in a few varieties, such as Standard Uzbek (Sjoberg 1962). With regard to alleged harmonic inconsistencies in Modern Uyghur, it is possible to argue that whatever appears to be disharmonic is attributable to specific, regular constraints and processes that are identified as follows:

(11) Disharmony factors in Modern Uyghur

- (1) Root-final disharmony
- (2) Phonological neutralization
- (3) Labialization constraints
- (4) Domanial constraints

Orthographic disharmony cannot be dismissed as entirely irrelevant in all cases, considering that, due to a usually high degree of prestige of the written language, orthographic conventions tend to become interpreted as generally prescriptive and thus tend to influence spoken forms to various degrees. This is the case in Modern Uzbek where a written Iranized urban dialect with a somewhat abstract orthography tends to reinforce phonetic neutralization in prestigious spoken varieties (Menges 1968: 79-80).

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Cardestuncer 1982b;

suffix (see 2.4.).



**2.1. Root-Final Disharmony.** As mentioned earlier (1.2.1.), disharmony is tolerated inside a Turkic root. The type of disharmony one encounters in a few apparently native roots, particularly in kinship terms and onomatopoeic forms, tends to be limited to a vowel and a consonant belonging to different harmonic categories; e.g., Uyghur *'aka* (not *\*'ākā* or *\*'aqa*) 'elder brother'. Any type of harmony violation may be encountered within roots that have been derived from foreign words; e.g., Chinese *dāxué* > Uyghur /#dašö+##/ → *dašö* '(Chinese) college', Farsi *qābrestān* > Uyghur /#qābristaan+##/ → *qāwristan* 'graveyard'. What determines the harmonic category of the remainder of a given word is the root-final syllable, in the vast majority of cases the final vowel; e.g., *'aka+da* 'by the elder brother', *dašö+dā* 'at the (Chinese) college', *qāwristan+da* 'at the graveyard'. Where in Uyghur a vowel happens to be followed by a root-final consonant of the opposite harmonic category, and the following suffix begins with a harmonically sensitive consonant, suffix-internal disharmony is created, since the root vowel determines the suffix vowel category, while the root-final consonant determines the category of the immediately adjacent suffix consonant (Hahn (forthcoming), Lindblad 1990: 28-29). This is most clearly illustrated by means of the dative-directive suffix /+GA+##/, which under ordinary circumstances has the front allomorphs /+gä+##/ ~ /+kä+##/ and the back allomorphs /+Ga+##/ ~ /+qa+##/, but which under certain conditions may also have the disharmonic allomorphs /+qä+##/ and /+ka+##/.

(12) Suffix-internal disharmony in Uyghur

Arabic <i>xaḷq</i> >#xälq+##	'nation'	→#xälq+qä+##	'to the nation'	
Farsi <i>kāvāk</i> >#kawak+##	'pit'	→#kawak+ka+##	'to the pit'	
Arabic <i>šarq</i> >#šärq+##	'east'	→#šärq+qä+##	'to the east'	
		#taktak+##	'clapper' → #taktak+ka+##	'to the clapper'

**2.2. Phonological Neutralization.** Among the Turkic languages, vowel neutralization is an innovative, apparently eastern areal feature. In Modern Uyghur, neutralization is created by fronting. The innovative features of unlaunting and raising in conjunction with fronting lead to regular occurrence of any unrounded vowel as *i* or *e* in light syllables. As in generally better-known cases such as Standard Russian and Iberian Portuguese, Uyghur vowel raising is associated with weakness and thus may be considered a manifestation of "vowel reduction."

Certain types of superstratal neutralization seem to have existed already in early Eastern Turkic varieties, probably as early as in Old

Uyghur dialects (Gabi (1968: 79) assumes it which served as a lit (1921), but this has n Ščerbak 1962). Meng fluences, particularly neutralization and sig tions are well-known ( cluding Standard Uzb hanced by way of orth attributed to a signifi fluences (i.e., Tajik la adoption of Uzbek am appears to occur as an a or less restricted to the also Turkic varieties, s Western Turkic regions

**2.2.1. Fronting.** Out languages have been w flawed harmonic syste pear to interpret pho phonemes (*yinwei*). U post-medieval Mongoli neutralization in Turki postlexical) rules, nam dard Uyghur, the high *i*, but any following me

(13) High-level fro

	#kiši-
V.Harmony	
Anaptyxis	
Plural	#kiši-
V.Harmony	#kiši-

<sup>19</sup> Linguistic evidence Oghuz Turkic group. of its speakers' eastwar Qinghai and Gansu. N dieval Chaghatay-Turki

arlier (1.2.1.), disharmony of disharmony one early in kinship terms vowel and a consonant 'ghur 'aka (not \*'ākū) ation may be encountered words; e.g., Chinese 'llige', Farsi *qabrestān* rd'. What determines word is the root-final ; e.g., 'aka+da 'by the *qāwristan+da* 'at the be followed by a root-nd the following suffix x-internal disharmony . vowel category, while the immediately adja- l 1990: 28-29). This is tive suffix /+GA+#/, omorphs /+gä+#/ ~ qa+#/, but which un- allomorphs /+qä+#/

-# 'to the nation'  
+ # 'to the pit'  
-# 'to the east'  
a+ # 'to the clapper'

Turkic languages, vowel areal feature. In Modern the innovative features ing lead to regular oc- syllables. As in gener- and Iberian Portuguese, id thus may be consid-

em to have existed al- y as early as in Old

Uyghur dialects (Gabain 1974: 45-46), thus a good millenium ago. Menges (1968: 79) assumes it to have existed also in Chaghatay ("Old Uzbek," which served as a literary language between the 15th century C.E. and 1921), but this has not been recognized by others (e.g., Eckmann 1966, Ščerbak 1962). Menges generally attributes neutralization to foreign influences, particularly to Iranization, namely to a Tajik stratum. Vowel neutralization and signs of perhaps more deep-seated harmonic perturbations are well-known characteristics of modern urban Uzbek varieties, including Standard Uzbek (in which neutralization has been artificially enhanced by way of orthographic rules). These characteristics too have been attributed to a significant Iranian stratum, not only to external Iranian influences (i.e., Tajik language proficiency among Uzbeks) but also to the adoption of Uzbek among former Tajik speakers. Vowel neutralization appears to occur as an areal feature among the Turkic languages. It is more or less restricted to the eastern regions of Central Asia, and it has affected also Turkic varieties, such as Salar dialects,<sup>19</sup> that had been imported from Western Turkic regions in which neutralization never gained a foothold.

**2.2.1. Fronting.** Outside neogrammarian circles, neutral vowels in Turkic languages have been widely regarded as being indicative of fundamentally flawed harmonic systems. Zhao & Zhu (1985: 20-21), for example, appear to interpret phonologically neutralized vowels in Modern Uyghur as phonemes (*yinwei*). Unlike for instance in certain Uralic languages and in post-medieval Mongolic varieties, except Moghul (Poppe 1960: 112-113), neutralization in Turkic is, by and large, attributable to superstratal (or postlexical) rules, namely they are preceded by harmonization. In Standard Uyghur, the high unrounded vowels are neutralized (i.e., fronted) to *i*, but any following morpheme is predictably harmonic.

(13) High-level fronting and harmony in Uyghur

	#kiši+#	#qis-m+#	#jāŋ++či+#
V.Harmony			#jāŋ++či+#
Anaptyxis		#qis-ım+#	
Plural	#kiši+lAr+#	#qis-ım+lAr+#	#jāŋ++či+lAr+#
V.Harmony	#kiši+lär+#	#qis-ım+lär+#	#jāŋ++či+lär+#

<sup>19</sup> Linguistic evidence points toward Salar belonging to the Western or Oghuz Turkic group. Salar acquired various Eastern strata in the wake of its speakers' eastward migration into areas located in today's Xinjiang, Qinghai and Gansu. Neutralization in Salar may be attributable to medieval Chaghatay-Turkic influence (Hahn 1988).

Fronting		#qis-im+lar+#	
	<i>kišilär</i>	<i>qisimlar</i>	<i>jāñčilär</i>
	'people'	'sections'	'warriors'

Neutralization by way of fronting takes place also on the mid level, which, as noted above, is occupied by loan-specific front /e(e)/ and back /ɤ(ɤ)/, both being orthographically rendered as *e*.

(14) Mid-level fronting and harmony in Uyghur

	#täybey+#	#gUNŠYV+#	#xYVbYV+#
Locative	#täybey+dA+#	#gUNŠYV+dA+#	#xYVbYV+dA+#
V.Harmony	#täybey+dä+#	#gUNŠYV+da+#	#xYVbYV+da+#
Fronting		#gUNŠee+da+#	#xeebey+da+#
	<i>Täybeydä</i>	<i>guyšeda</i>	<i>Xebeyda</i>
	'at Taipei'	'at the commune'	'at Hebei'

The label "fronting" may be considered somewhat too general. This type of neutralization, in which back vowels come to share a set of allophones with its front counterpart, takes place only in neutral types of environments, namely in environments in which either front vowels or back vowels may occur. Back-vocalic allophones still occur in typically back-vocalic environments, namely adjacent to uvulars.

2.2.2. **Vowel Raising.** In the standard dialect and in other northern dialects of Modern Uyghur, the low unrounded vowels (i.e., /ä/ and /a/) are transformed into high unrounded vowels (i.e., *i* and *ɨ* respectively) in non-initial and non-final light (i.e., unstressed CV-type) syllables. This is represented consistently in the official orthographies, except where it applies word-finally in connected speech. Vowel raising follows harmonization and precedes neutralization (see 2.2.1.); i.e., raised vowels are neutralized to *i*, and a following suffix is predictably harmonic.

(15) Uyghur vowel raising

#bala+lar+i+#käl--mä-di# → [balilirikälmidɨ]  
 #child+PL+3+#come--NEG-PAST3# 'His children did not come.'

#ʔišäg+i+gä+#bar--sa-niz+# → [ʔišiyiyiβársiniʔiz]  
 #donkey+3+DAT+#go--COND-2POL+# 'if you go to his donkey'

2.2.3. **Umlauting.** In many Uyghur dialects, including the standard dialect, vowel raising and fronting are preceded by an umlauting rule that

creates what is orthographically a syllable followed by a syllable. The front vowel /ä/ or /a/) is raised to

(16) Uyghur umlaut

#käl+gä+#	→	#käl+i+#
#bal+ga+#	→	#bal+i+#
#ʔät+i+dä+#	→	#ʔät+i+#
#ʔat+i+da+#	→	#ʔat+i+#
#bär-iš+mäg+#	→	#bär-iš+#
#bar-iš+mac+#	→	#bar-iš+#

Being of the type "heavy," long vowel syllable "heavy," long vowel

(17) Uyghur umlaut

#tär+	→	#tär+i+
#täär+	→	#täär+i+

Rather than writing *tär*, Lindblad (1990: 9–12) does not precedes fronting. His *ä* is a back mid-level vowel

2.3. **Labialization** C among vowels in Standard Uyghur with its manifestations in Uyghur response most closely related to the prevalent among Western languages is archiphonemically identifiable as [+Round] rather than [-Round] process (i.e., [ØRound]) as observed by the observer about Standard Uyghur morphemes within the class of vowels.

(18) Labialization in Uyghur

- (1) #yol+um+# 'my way'  
 #köl+üm+# 'my lake'  
 #tuz++luq+# 'salty'  
 #süt++lük+# 'dairy'

- (2) #yol+umiz# 'our way'

creates what is orthographically represented as *e*: in a word-initial light syllable followed by a syllable with /i/ or /ɪ/, a low unrounded vowel (i.e., /ä/ or /a/) is raised to mid-level (i.e., to *e* or *ɪ* respectively).

## (16) Uyghur umlauting (I)

#kälın+gä+#	→	#kelın+gä+#	→	kelingä	'to the bride'
#balıg+ga+#	→	#bvlıg+ga+#	→	belıqqa	'to the fish'
#ʔät+i+dä+#	→	#ʔet+i+dä+#	→	'etidä	'in its flesh'
#ʔat+i+da+#	→	#ʔyt+i+da+#	→	'etida	'in its name'
#bär-iş+mäg+#	→	#ber-iş+mäg+#	→	berışmäk	'giving together'
#bar-iş+mag+#	→	#bvr-iş+mag+#	→	berışmaq	'going together'

Being of the type VV (i.e.,  $V_iV_j$ , where  $i = j$ ) and thus rendering a syllable "heavy," long vowels cannot be umlauted.

## (17) Uyghur umlauting (II)

#tär+i+#	→	teri	'his sweat'
#täär+i+#	→	täri	'his complexion'

Rather than writing a single umlauting rule that raises and fronts, Lindblad (1990: 9–12) describes umlauting as "initial vowel raising," which precedes fronting. His solution has been facilitated by his identification of a back mid-level vowel phoneme.

**2.3. Labialization Constraints.** At first glance, labial assimilation among vowels in Standard Uyghur appears to be inconsistent in comparison with its manifestations in most other Turkic languages. Uyghur roundness response most closely resembles the type of high labial harmony that is prevalent among Western Turkic languages (see 1.2.2.1.), but since roundness is archiphonemically specified (i.e., /U/), this response would, theoretically, be identifiable as a high-level labialization process (i.e., [-Round] → [+Round]) rather than as a truly harmonizing, namely feature-specifying, process (i.e., [ØRound] → [±Round]). What tends to baffle the casual observer about Standard Uyghur vowel labialization is that only certain morphemes within the harmonization domain (see 2.4.) take on rounded vowels.

## (18) Labialization in Uyghur

(1) #yol+um+#	'my way'	#gaaz+im+#	'my goose'
#köl+üm+#	'my lake'	#xälq+im+#	'my nation'
#tuz++luq+#	'salty'	#qar++liq+#	'snowy'
#süt++lük+#	'dairy ...'	#tääm++lik+#	'tasty'
(2) #yol+umiz#	'our way'	#gaaz+imiz+#	'our goose'

#köl+ümiz+#	'our lake'	#xälq+imiz+#	'our nation'
#?on+unči#	'tenth'	#toqsaan+inči+#	'eightieth'
#?üč+ünči+#	'third'	#bäs+inči+#	'fifth'
(3) #yol+nin+#	'of the way'	#Gaaz+nin+#	'of the goose'
#köl+niŋ+#	'of the lake'	#xälq+niŋ+#	'of the nation'
#tuz++siz+#	'salt-free'	#qar++siz+#	'snow-free'
#süt++siz+#	'non-dairy'	#tääm+siz+#	'tasteless'
(4) #yol+i+#	'its way'	#Gaaz+i+#	'its goose'
#köl+i+#	'its lake'	#xälq+i+#	'its nation'
#tuz+ni+#	'the salt' acc.	#qar+ni+#	'the snow' acc.
#süt+ni+#	'the milk' acc.	#tääm+ni+#	'the taste' acc.

Groups (18.1) and (18.2) contain only very small samples to illustrate that labialization response after a stem-final rounded vowel occurs only in certain cases. In suffixes of the type shown in Group (18.2) (i.e., /±VCVC(±)#/, e.g., #yol+umiz+#), the first vowel is represented as *i* in the official orthographies (e.g., *yolimiz*), but most speakers labialize it after a rounded stem vowel (e.g., [yolumiz]). Some speakers will apply labialization to suffixes of the type shown in Group (18.3) (i.e., /±CVC(±)#/, e.g., #yol+nun#), but this is hardly acceptable in the standard language. Labialization will never be applied to suffixes of the type shown in Group (18.4) (i.e., /±(C)V(±)#/, e.g., \**yolu*), except in dialects that are considered far removed from Standard Uyghur.

The degree of what at first seems to be inconsistency among the Uyghur data becomes all the more apparent in juxtaposition with cognates in Literary Qazaq and Uzbek, in which labialization does not apply, as well as with cognates in Modern Standard Turkish, in which labial harmony applies to any high vowel.

(19) Labialization in Qazaq, Uzbek, Uyghur and Turkish

	Qazaq	Uzbek	Uyghur	Turkish	
(1)	<i>johm</i>	<i>yolim</i>	<i>yolum</i>	<i>yolum</i>	'my way'
	<i>kölim</i>	<i>kolim</i>	<i>kölüm</i>	<i>gölüm</i>	'my lake'
	<i>tuzdi</i>	<i>tuzli</i>	<i>tuzluq</i>	<i>tuzlu</i>	'salty'
	<i>sütüti</i>	<i>sutli</i>	<i>sütlük</i>	<i>sütlü</i>	'dairy ...'
(2)	<i>jolimiz</i>	<i>yolimiz</i>	<i>yolumiz</i>	<i>yolumuz</i>	'our way'
	<i>kölimiz</i>	<i>kolimiz</i>	<i>kölümüz</i>	<i>gölümüz</i>	'our lake'
	<i>onınşı</i>	<i>oninči</i>	<i>'onunči</i>	<i>onunju</i>	'tenth'
	<i>üšinši</i>	<i>učinči</i>	<i>'üčünči</i>	<i>üçünjü</i>	'third'

(3) *joldiŋ* *yo-*  
*köldiŋ* *koi-*  
*tuzsiz* *tuz-*  
*sütsiz* *süt-*

(4) *joli* *yol*  
*köli* *kol*  
*tuzdi* *tuz*  
*sütüti* *süt*

Standard Uyghur on the assumption that ically to anaptyctic vo a desirable CVC-type s two morphemes would (e.g., \**tuz+ni*). The o vowel (which we repre and the respective val harmonically specified vowel—in fact any unc regard to the features [l value of its feature [Ba /i/ ~ /ɪ/, /U/ → /ü/ -

This analysis is, t what is commonly know Turcologists. In fact, already in Old Uyghur ( from which Modern Uy

Since CC-type suffi is no need for anaptyx (e.g., #*köl+din+#* (no to exist *vis-à-vis* suffixe 'salty') and /±VCVC(± of suffixes, though bein may be fairly safely as For example, the attrib seems to be composed

<sup>20</sup> In Uyghur, other t ization; i.e., prosthesis: nor anaptyctic \**suport*) Uyghur *Tomski* (neither

'our nation'  
 ≠ 'eightieth'  
 'fifth'  
 'of the goose'  
 'of the nation'  
 'snow-free'  
 'tasteless'  
 'its goose'  
 'its nation'  
 'the snow' acc.  
 'the taste' acc.

(3)	<i>joldıy</i>	<i>yolnıy</i>	<i>yolnıy</i>	<i>yolun</i>	'of the way'
	<i>köldıy</i>	<i>kolnıy</i>	<i>kölnıy</i>	<i>gölnün</i>	'of the lake'
	<i>tuzsız</i>	<i>tuzsız</i>	<i>tuzsız</i>	<i>tuzsuz</i>	'salt-free'
	<i>sütsız</i>	<i>sutsız</i>	<i>sütsız</i>	<i>sütsüz</i>	'non-dairy'
(4)	<i>joli</i>	<i>yoli</i>	<i>yoli</i>	<i>yolu</i>	'its way'
	<i>köli</i>	<i>koli</i>	<i>köli</i>	<i>gölü</i>	'its lake'
	<i>tuzdı</i>	<i>tuzni</i>	<i>tuzni</i>	<i>tuzu</i>	'the salt' acc.
	<i>sütti</i>	<i>sutni</i>	<i>sütni</i>	<i>sütü</i>	'the milk' acc.

Standard Uyghur vowel labialization can be explained reasonably only on the assumption that it applies exclusively to epenthetic vowels, specifically to anaptyctic vowels,<sup>20</sup> namely to vowels that are inserted to create a desirable CVC-type sequence (e.g., *tuz+um* 'my salt') where the union of two morphemes would otherwise create an undesirable CC-type sequence (e.g., *\*tuz+m*). The only inherent feature specification of an epenthetic vowel (which we represent as /<sup>o</sup>/) is [-Low]; in other words, it is high, and the respective values of its features [Back] and [Round] come to be harmonically specified upon its insertion. In contrast, an underlying high vowel—in fact any underlying vowel—in a suffix comes prespecified with regard to the features [Low] and [Round] (i.e., /I/, /U/, /A/), and only the value of its feature [Back] comes to be harmonically specified (i.e., /I/ → /i/ ~ /ı/, /U/ → /ü/ ~ /u/, /A/ → /ä/ ~ /a/).

This analysis is, by and large, consistent with the identification of what is commonly known as "linking vowels" (German *Bindevokale*) among Turcologists. In fact, the same type of harmonic labialization applied already in Old Uyghur (Gabain 1974: 47–48, Poppe 1960: 150), a language from which Modern Uyghur descended partly.

Since CC-type suffixes do not exist (e.g., *\*#tuz++lq+#*), and there is no need for anaptyxis between a consonant and a CV-type sequence (e.g., *#köl+din+#* (not *\*köl+üdin*) 'from the lake'), a problem appears to exist *vis-à-vis* suffixes of the types /±CVC(±)#/ (e.g., *#tuz++luq+#* 'salty') and /±VCVC(±)#/ (e.g., *#köl+ümiz+#* 'our lake'). These types of suffixes, though being considered indivisible in the modern language, may be fairly safely assumed to be compounds of two or more suffixes. For example, the attributive suffix /++l<sup>o</sup>G+#/ (as in *#tuz++luq+#*) seems to be composed of adjectival /++l+#/ and /+G+#/ (Gabain

<sup>20</sup> In Uyghur, other types of epenthetic vowels do not undergo labialization; i.e., prosthesis: Russian *sport* > Uyghur *isport* (neither *\*usport* nor anaptyctic *\*suport*) 'sport'; post-final epenthesis: Russian *Tomsk* > Uyghur *Tomski* (neither *\*Tomsku* nor anaptyctic *\*Tom(u)suk*) 'Tomsk'.

ll samples to illu-  
 ended vowel occurs

Group (18.2) (i.e.,  
 s represented as i in  
 ters labialize it after  
 will apply labializa-  
 /±CVC(±)#/, e.g.,  
 ard language. Labi-  
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sistency among the  
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 ich labial harmony

Turkish

y'  
 e'

...'

y'  
 e'

1974: 60,65,76), and the third person plural possessive marker /+°mIz+#/ (as in #köl+ümiz+#) appears to be derived from first person singular possessive /+m+#/ (as in #köl+üm+# 'my lake') and the ancient dual or plural marker (/+r<sub>2</sub>+#/ >) /+z+#/, i.e., from /+m+z+#/, in which case the second anaptyctic vowel became underlying and the first remained anaptyctic.

The identification of anaptyxis is corroborated by the fact that the type of vowel in question occurs, wherever possible, in alternation with zero; e.g., #yol+um# 'my way' vs. #bala+m+# 'my child'. Most convincingly, the same type of labialization and V~∅ alternation occurs where anaptyxis converts attestable foreign CC-type sequences to Uyghur CVC-type sequences.

(20) Uyghur anaptyxis

		'egiz	'mouth'	( 'agzim	'my mouth')
		köñül	'heart'	( köñlüm	'my heart')
		'ogul	'son'	( 'oglum	'my son')
Arab.	šukr	> šükür	'gratitude'	( šükrüm	'my gratitude')
Arab.	mulk	> mülük	'property'	( mülküm	'my property')
Russ.	litr	> litir	'liter'	( litri	'liter of it')
Russ.	traktor	> tiraktor	'tractor'		
Russ.	truba	> turuba	'pipe'		

At this juncture, there appears to be no definitive answer to the question in which direction Turkic vowel assimilation has been developing: toward labialization or away from it. As with most problems in diachronic Turkic phonology, Early Written Turkic documents (i.e., Kök Turkic and Old Uyghur inscriptions) and virtually all other pre-contemporary written Turkic works do not provide sufficient relevant data: they represent only a small handful of varieties at relatively late historical stages, and their orthographies do not provide for consistent vowel representation. If the development is assumed to have moved toward labialization, the type of labial assimilation we have identified in Modern Standard Uyghur would represent the earliest stage: anaptyctic labialization. Labial harmony of high underlying vowels would represent a major intermediate stage, and the various types of general labial harmony together would represent the latest major stage. Epenthetic labialization, or labial assimilation applying to underlying and epenthetic high vowels, is assumed to be contained in high and general labial harmony systems. On the basis of this general model, degree of power to cause and resist labialization is found to be dependent upon degree of specification and markedness: minimal /°/ ([-Low, ∅Back]), and maximal /a/ ([+Low, +Back]).

(21) Types of Turkic Labialization Type I

- (1) —
- (2) Anaptyctic
- (3) High
- (4) General

2.4. Domanial Cons that Turkic harmony i or, more precisely state nearest following word the root level, being co to Turkic roots. In any the harmonic category created only where the gories (see 2.1.). Under harmony, except that in /u/) may terminate the reached.

Given this analytic the palato-velar harmoneme and whose nonce postlexical) factors is ic boundary. Two discret across which only synta Compound elements and single word boundary, w devocalization and vowe assimilation. Within the ccesses would be attribut

This basic analysis tent with the one Kardes for Turkish. On this bas example, which in other

marker /+°mIz+#/  
 person singular pos-  
 the ancient dual or  
 m+z+#/, in which  
 id the first remained

y the fact that the  
 in alternation with  
 y child'. Most con-  
 nation occurs where  
 es to Uyghur CVC-

'my mouth')  
 'my heart')  
 'my son')  
 'my gratitude')  
 'my property')  
 'liter of it')

answer to the ques-  
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 nimal /°/ ([-Low,

(21) Types of Turkic labial vowel assimilation

Labialization Type	Vowel		Sample Language
	Labializing	Labialized	
(1) —	none.....	none	Uzbek
(2) Anaptyctic	any.....	°	Uyghur
(3) High	any.....	high	Turkish
(4) General	(1) any.....	high	Yakut
	low.....	low	
	(2) any.....	high	Qirghiz
	any but u.....	low	
	(3) any.....	any	Turkmen

**2.4. Domanial Constraints.** Above (1.2.1., 1.3.) it has been mentioned that Turkic harmony is restricted in applicability to the span of a word, or, more precisely stated, to all derivative and syntactic suffixes up to the nearest following word boundary. Disharmony has come to be tolerated on the root level, being common in foreign words that have been converted to Turkic roots. In any case, it is the stem-final syllable that determines the harmonic category of the remainder of a given word, disharmony being created only where the final vowel and consonant belong to different categories (see 2.1.). Under ordinary circumstances, this applies also to labial harmony, except that in this case a non-qualifying segment (e.g., /a/ after /u/) may terminate the process before the nearest word boundary has been reached.

Given this analytical model, any morpheme that does not conform to the palato-velar harmony specification of an immediately preceding morpheme and whose nonconformity cannot be attributed to superstratal (or postlexical) factors is identified as being preceded by at least one word boundary. Two discrete words are separated by two word boundaries, across which only syntactically conditioned connected speech rules apply. Compound elements and enclitics are separated from a preceding word by a single word boundary, which permits the application of voicing assimilation, devocalization and vowel truncation but not the application of harmonic assimilation. Within the framework of lexical phonology, these sets of processes would be attributed to different strata.

This basic analysis is, also within a general Turkic context, consistent with the one Kardestuncer (1982a, 1982b, 1983) proposes specifically for Turkish. On this basis, the Turkish gerundive marker *...iyor(...)*, for example, which in other analyses is considered a disharmonic, opaque suf-

fix (e.g., Clements 1980, Clements & Sezer 1982), is identified as being an enclitic ("gerundive compound component," Kardestuncer 1983) whose palatal glide raises the converbial suffix (/A#/ →) -ä ~ -a; e.g., #ğäl-ä#yor# → *geliyor* 'is coming' consistent with #ğäl-ä#bil-ir# → *gelebilir* 'can come'. Compared with the potential marker ...*bilir*(...), which is derived from the aorist form of the verb *bil*- 'to know', it appears that ...*yor*(...) lacks the aorist suffix (/r+#/ →) -ur, besides the fact that in Modern Turkish \**yor*- does not exist as a verb from which a gerundive marker could have been developed. Further research indicates that ...*yor*(...) is a contracted form of gerundive #yor-<sup>o</sup>r# (consistent with #tur-<sup>o</sup>r#, see 1.4.), and that *yor*(*v*)- is attested as an Early Written Turkic verb denoting 'to walk', 'to go on', 'to progress' (Gabain 1974: 388, Lewis 1978: 108, Räsänen 1957: 224-225, 1969: 207), being preserved in the causative form for instance in Old Ottoman Turkish (*yort*- 'to cause (animals) to go' >?) 'to go (on)', 'to travel', Dilçin 1983), Modern Uzbek (*yort*- 'to travel at a steady, fast pace') and Modern Uyghur (*yort*- 'to trot').

Kaisse (1986) has identified in Turkish another morphemic stratum between the suffix and enclitic strata. Such "prestressed suffixes" (or "non-harmonizing enclitics") exist also in Modern Uyghur and other Turkic languages. Morphemes agglutinated on this stratum are within the harmonization domain but outside the word stress assignment domain; i.e., they surface as harmonic but never take on primary stress.<sup>21</sup>

## (22) Prestressed suffixes

Turkish	Uyghur	
#ğäl--mä-Ø#	#käl--mä-Ø#	'don't come!'
#kât--ma-dim#	#qäl--mi-dim#	'I did not stay'
#süt++lũ+#	#süt++lük+#	'containing milk'
#tüz++suz+#	#tüz++siz+#	'salt-free'

The identification of this prestressed stratum is relevant also within a comparative Turkic context. Certain prestressed suffixes in one language correspond to enclitics in another language, and some of these enclitics appear to be word-derived. This leads to the conclusion that Turkic affixation, specifically suffixization (i.e., the development of a bound morpheme or even a separate heteromorphic structure into an underspecified,

<sup>21</sup> Primary stress is assigned to the last heavy syllable (i.e., CVV, CVC, CVVC, CVCC) in ultimate or penultimate position; where no such syllable is encountered, primary stress is assigned to any final syllable (Hahn 1991, forthcoming).

harmonizing suffix in Turkish involves the shift from prestressed suffix stratum to the stressed stratum. Unless one considers for Turkish /--mA-/ (e.g., Uyghur to stressed /-mAy#/ i /A#/ > /-mAy#/, e.g. not go').

## (23) Turkic cliticization

Morpheme	Box
1. Root	
2. Suffix 1	+ ^
3. Suffix 2	++
4. Enclitic	#
5. Word	##

The entire attestable d Turkic verb *il*- 'to attend' used both as a postpositional comitative or instrumental in Azerbaijani (Houschok Standard Azerbaijani (it as a prestressed suffix vowel truncation is common).

## (24) Development

## (1) Word-level:

Turkish

## (2) Enclitic-level:

Tabrizi

## (3) Prestressed-suffix:

Turkish

Soviet

<sup>22</sup> Roughly based up

is identified as being estuncer 1983) whose  $-ā \sim -a$ ; e.g., #ǰāl-ā#bil-ir# → *gelebilir* '...bilir(...)', which is 'now', it appears that besides the fact that from which a gerund-search indicates that °r# (consistent with an Early Written Turkic) (Gabain 1974: 388, ), being preserved in Turkish (*yort-* 'to cause', 1983), Modern Uzbek Uyghur (*yort-* 'to trot').

morphemic stratum "ed suffixes" (or "non- and other Turkic language within the harmonic domain; i.e., they

come!  
not stay'  
ining milk'  
:ee'

relevant also within a fixes in one language me of these enclitics sion that Turkic affixion of a bound morpho- to an underspecified,

ble (i.e., CVV, CVC, here no such syllable syllable (Hahn 1991,

harmonizing suffix in the process of changing into a bound morpheme), involves the shift from the word stratum via the enclitic stratum to the prestressed suffix stratum. Movement from the prestressed suffix stratum to the stressed suffix stratum does not seem to be attestable, unless one considers for instance the development of prestressed negative /--mA-/ (e.g., Uyghur #bar--mA-d°m# → *bármidim* 'I did not go') to stressed /-mAy#/ in the course of fusing with /-A#/ (i.e., \*/--mA-A#/ > /-mAy#/, e.g., Uyghur #bar-mAy#mān# → *barmáymān* 'I do not go').

(23) Turkic cliticization and affixation<sup>22</sup>

Morpheme	Boundary	Phonology	Development
1. Root		foot-formation	
2. Suffix 1	+ ~ -	word stress	
3. Suffix 2	++ ~ --	harmony	(↑)
4. Enclitic	#	connected speech rules 1	↑
5. Word	##	connected speech rules 2	↑

The entire attestable development can be followed in the case of the Early Turkic verb *il-* 'to attach', whose converbial form *il-ā* came to serve as a comitative or instrumental marker. In Modern Standard Turkish, it is used both as a postposition (i.e., word) and as a prestressed suffix. Tabrizi Azerbaijani (Householder & Lotfi 1965) treats it as an enclitic, while Soviet Standard Azerbaijani (Gadžieva 1966, Householder & Lotfi 1965: 79) treats it as a prestressed suffix that differs from its Turkish counterpart in that vowel truncation is complete.

(24) Development of \**il-ā* 'attaching' > 'with'

(1) Word-level:

Turkish:	#át##ilā#	'with the horse'
	#atá##ilā#	'with the father'

(2) Enclitic-level:

Tabrizi Azerbaijani:	#át##ilā#	'with the horse'
	#atá##ylā#	'with the father'

(3) Prestressed-suffix-level:

Turkish:	#át++la#	'with the horse'
	#atá++yla#	'with the father'
Soviet Azerbaijani:	#át++la#	'with the horse'
	#atá++la#	'with the father'

<sup>22</sup> Roughly based upon Kaisse's stratification model (1986: 237).

Modern Uyghur retains on the enclitic level a number of morphemes that in other Turkic languages have progressed to the prestressed suffix level. This will be illustrated by means of the following example.

The prestressed equative suffix /++dAy+#/ in some Turkic languages corresponds in Standard Uyghur to the enclitic /#däg+#/ after nominals and to the prestressed suffix /++dAG+#/ after pronominals.<sup>23</sup>

(25) Equative marking

(1) Nominal

<i>Uyghur</i>	<i>Qazaq</i>	
#küz+#däk#	#küz++däy#	'autumn-like'
#čüš+#täk#	#tüs++täy#	'dream-like'
#qâr+#däk#	#qâr++day#	'snow-like'
#qüş+#täk#	#qüş++tay#	'bird-like'

(2) Pronominal

<i>Uyghur</i>	<i>Qazaq</i>	
#qá+n++daq#	#qá+n++day#	'like what?'
#šú+n++daq#	#só+n++day#	'like that'

In the wake of re-nativization efforts among language planners, the cognate equative enclitics /#däg+#/ and /#dägin+#/, still being used in certain dialects, have been promoted to replace the postposition (Arabic *qadr* 'equivalent' >) *kadar* as the Standard Turkish equative marker (Lewis 1978: 88). Gabain (1974: 64,146) recognizes the suffix /++dAG+#/ in Old Uyghur but also identifies *täg* as a separately written postposition. It is tempting to follow Zhao (1984) in linking these forms to the verb *täg* 'to approach', 'to reach' (\*> 'similar', 'equal'). Yet, just as well worth considering within an Altaic context are the Mongolian forms *teg* 'level (place)' > *tegši* 'equal'. In any of these cases, a suffix ought to be assumed dropped (e.g., converbial /-n+#/ or locative /+n+#/; Gabain 1974: 141-142, 392-393), being preserved in the dialectal Turkish forms. Alternatively, one might go along with the theory that this marker has been derived from the verb *tä* 'to say' (which as converbial /#dä-b+#/ → *däp* is extensively used as a marker of purpose) nominalized by /-G+#/ (see e.g., Räsänen 1957: 71-72).

<sup>23</sup> Voiced consonants are assumed to be underlying in cases of [±Voiced] alternation, since only devoicing, not voicing, is attestable in Uyghur (Hahn 1991).

Verbal cliticization specifically in the use mentioned above. For example 'to be in a prone position denoting progression.

(26) Uyghur *yat-*

#sözlä-b#yat-A#  
#speak-CONV#A  
'I am speaking.'

By contrast, cliticization construction, *yat-* occur

(27) Uyghur *yat-*

#sözlä-b#  
#speak-cc  
'I speak an

Thus, strictly speaking constraints does not imply conscious awareness of distinctions have led to

2.5. Conditional Tr: that in Modern Uyghur many may be observed superstratal (or postlexical) have been identified. This feature specification will This is correct in all cases serves some mention at /#čä+#/, whose functional manner: *'uygurčä* '(in '(one) as big as a mouse 'ončä 'about ten').<sup>24</sup> (response in a following

<sup>24</sup> Initial /č/ does not voicing assimilation in

number of morphemes  
the prestressed suffix  
ing example.

some Turkic languages  
äg+#/ after nominals  
nominals.<sup>23</sup>

mn-like'  
m-like'  
-like'  
like'

what?'  
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language planners, the  
+#/ , still being used  
postposition (Arabic  
quative marker (Lewis  
x /++dAG#/ in Old  
en postposition. It is  
rms to the verb *täg-*  
st, just as well worth  
olian forms *teg* 'level  
ought to be assumed  
/; Gabain 1974: 141-  
forms. Alternatively,  
has been derived from  
' → *däp* is extensively  
#/ (see e.g., Räsänen

in cases of [±Voiced]  
able in Uyghur (Hahn

Verbal cliticization occurs in Modern Uyghur verb compounding, specifically in the use of aspectual verbs, like Turkish /...A-#yor-/ mentioned above. For example, the verb *yat-* 'to settle down', 'to be settled', 'to be in a prone position', has come to serve as a cliticized aspectual verb denoting progression.

(26) Uyghur *yat-* as an aspectual enclitic

#sözlä-b#yat-A#män# → { Khotan *sözläwyätimän* }  
#speak-CONV#ASP-V#1SG# → { Standard *sözläwätimän* }  
'I am speaking.'

By contrast, cliticization is absent where, in the same type of converbial construction, *yat-* occurs in its original function as an independent verb.

(27) Uyghur *yat-* as an independent verb

#sözlä-b##yat-A#män# → *sözläp yätimän*  
#speak-CONV##lie-V#1SG# →  
'I speak and lie down.'

Thus, strictly speaking, apparent disharmony that is due to domanical constraints does not fully qualify as a form of disharmony. A lack of conscious awareness of these domanical definitions and a lack of orthographic distinctions have led to the widespread perception of it as disharmony.

**2.5. Conditional Transparency.** The general argument so far has been that in Modern Uyghur, as in virtually all other Turkic languages, harmony may be observed to apply quite regularly once seemingly perturbing superstratal (or postlexical) processes and domanical (or stratal) definitions have been identified. The implication has been that the inherent degree of feature specification within a given morpheme on a given level is constant. This is correct in all cases examined so far. However, one exception deserves some mention at this point: the Modern Uyghur postnominal enclitic /#čä+#/, whose function might be summarized by the label "modal" (e.g., manner: *'uygurčä* '(in the) Uyghur (manner/language)', equative: *tagčä* '(one) as big as a mountain', diminutive: *kitapčä* 'booklet', approximative: *'ončä* 'about ten').<sup>24</sup> Quite predictably, this enclitic triggers front-vocalic response in a following suffix, as long as the /ä/ does not occur in an open

<sup>24</sup> Initial /č/ does not alternate. In Uyghur, suffix- and enclitic-initial voicing assimilation involves only the native pairs /d~t/, /g~k/ and

syllable, i.e., does not undergo raising to *i*. As soon as it is raised, it turns transparent, namely it ceases to function as a harmonic determinant, the result being that any following suffix harmonizes with the syllable preceding /+čä+#/ (Hahn 1991, Lindblad 1990: 44-48, Šinjay 'Uyğur' Aptonom Rayonluq Millätlär Til-Yeziq Xizmiti Komiteti 1985: 25-27).

(28) Transparency of ...čä in Uyghur

- (1) /#näy+#čä+m+dA+#/ → *näyčämädä* 'in my little flute'  
 /#kitaab+#čä+m+dA+#/ → *kitapčämädä* 'in my booklet'
- (2) /#näy+#čä+dA+#/ → *näyčidä* 'in the little flute'  
 /#kitaab+#čä+dA+#/ → *kitapčida* 'in the booklet'

It might be proposed that this is a case of feature erasure, namely a type of rule that changes the specification [-Back] to [ØBack] (i.e., /ä/ to /A/) after raising has changed /ä/ to *i*. It is tempting to regard this case of conditional underspecification—namely a case in which a morpheme wavers between two levels—as affording us a glimpse at history in the making: a shift from the enclitic stage to the prestressed suffix stage, which is a development that in other Turkic languages has been completed; e.g., Turkish *türkčä* (cf. Uyghur *türkčä*) 'Turkish', *uyğurča* (cf. Uyghur *uyğurčä*) 'Uyghur'. However, considering that it is a language-specific rule (i.e., vowel raising) that provides the condition in this unique case of "conditional transparency" (or "quasi-transparency"), serious consideration seems to be due to Lindblad's (1990: 47-48) proposed explanation: upon raising, /#čä+#/ comes to be indistinguishable from the agent marker /++čI+#/, which, being a prestressed suffix, is harmony-sensitive (e.g., /#xizmät++čI+lAr+#/ → *xizmätčilär* 'service employees', /#čarwa++čI+lAr+#/ → *čarwičilar* 'herders').

2.6. Conclusion. By outlining harmonic principles within a general Turkic context and by identifying four factors that create what on the surface appears to be disharmony, the Modern Uyghur harmony system

/ç~q/. (Labial stops do not occur in such positions.) The phonemes /j č/, /z s/ and /ž š/ do not function as pairs (i.e., /č/, /s/ and /š/ do not undergo alternation), because the respective voiced counterparts are loan-specific as onsets. Other Turkic languages have extended their alternation systems to include some or all of these; e.g., \*/süt++čI+#/ > Turkish *sütçü* (cf. Uyghur *sütçi*) 'milk vendor', \*/?aab++čI+#/ > Turkish *avcı* (cf. Uyghur *owçı*) 'hunter', \*/kör--sA+#/ > Shor *körzä* (cf. Uyghur *körsä*) 'if he sees'.

has been described as evolution can be unde-

Uyghur disharmony phonologically adapted involve harmonization consist of two segments following suffix beginning both segments are har-

Uyghur vowel neutralization (postlexical) rules of raising and lowering of vowels are shifted to the mid-syllable, low, unrounded vowels are then fronted.

Labial harmonization of vowels. Assisted by the Turkic high labial harmonization, high labial harmony represents a degree of vocalic labialization greater its power to ca-

One of the reasons for the expression that the Uyghur harmony constraints (i.e. disharmony) had not been understood in terms of morphemes in Uyghur languages: (1) suffixization, and (3) encliticization. Evidence has been presented that the process developed from being phonologically dependent by way of cliticization is restricted to suffixization process that involves a shift from re-

has been described as being a regularly applying set of processes whose evolution can be understood by means of comparative data.

Uyghur disharmony occurs within roots that have been based upon phonologically adapted loanwords, in which cases nativization does not involve harmonization. Where a root-final VC-type sequence happens to consist of two segments of opposite harmonic categories, an immediately following suffix beginning with a CV-type sequence will be disharmonic if both segments are harmony-sensitive.

Uyghur vowel neutralization consists of a set of superstratal (or postlexical) rules of raising and fronting. In non-final light (i.e., CV-type) syllables, low, unrounded vowels are raised. In initial light syllables, they are shifted to the mid level by a following high, unrounded vowel. In any non-initial light syllable, they shift to the high level. All unrounded non-low vowels are then fronted to *e* and *i* respectively.

Labial harmonization in Uyghur has been shown to be restricted to anaptyctic vowels. Assumedly, this is the earliest type of labial harmony in Turkic; high labial harmony represents an intermediate stage, and general labial harmony represents the final stage in this development. The degree of vocalic labialization in Turkic has been identified as being related to the degree of feature specification: the more specified and marked a vowel, the greater its power to cause and resist labialization.

One of the reasons why traditional analyses created the common impression that the Uyghur harmony system is greatly flawed is that domainial constraints (i.e., rule applications on various morphological strata) had not been understood. We have identified three types of agglutinative morphemes in Uyghur, and this may well be extensible to other Turkic languages: (1) suffixes, (2) prestressed suffixes (or "non-harmonic enclitics"), and (3) enclitics. In the course of outlining this argument, some evidence has been presented to show that Turkic bound morphemes may develop from being phonologically discrete to being phonologically dependent by way of cliticization and affixation. Affixation—which in Turkic is restricted to suffixization—has been argued to be a type of abstraction process that involves a shift from full specification to underspecification, namely a shift from resistance to susceptibility in terms of harmonization.

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