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Undergoers are Harmony Sources:
Maintaining Iterative Harmony
in Oroqen Dialects

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Introduction

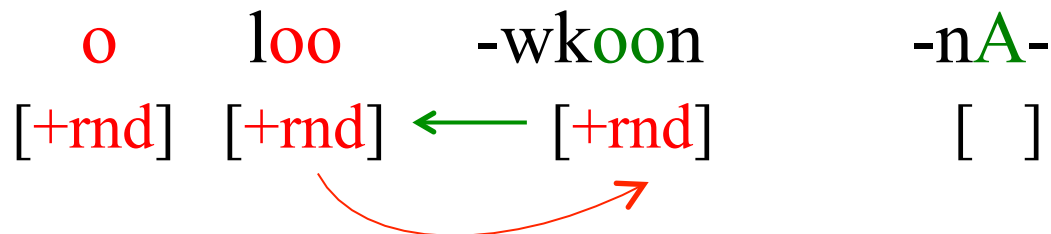
Nevins (2010) proposes that vowel harmony observes relative locality, whereby a vowel that lacks a required feature seeks it from the nearest source.

o	loo	-wkAAn	-nA-
[+rnd]	[+rnd]	[]	[]

Introduction

Nevins (2010) proposes that vowel harmony observes relative locality, whereby **a vowel that lacks a required feature** seeks it from the nearest **source**.

The 'nearest' is parametrically defined: e.g. the nearest vowel to the left, or the nearest vowel on the left bearing a contrastive value of the required feature, etc.

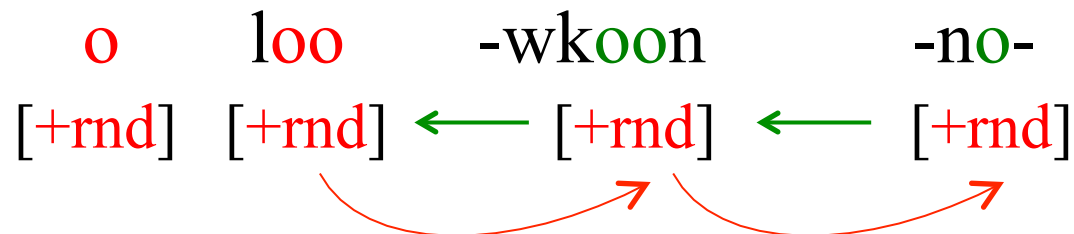


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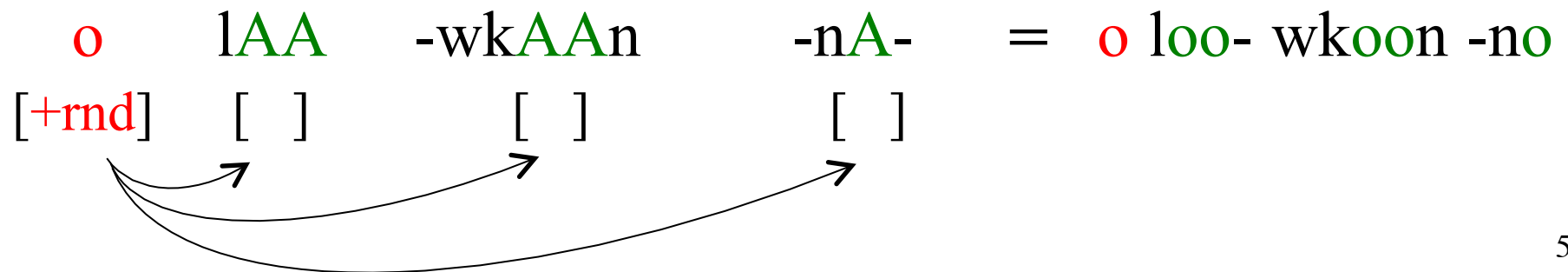
On this approach harmony is a derivational process; it propagates iteratively across a harmony domain.



Introduction

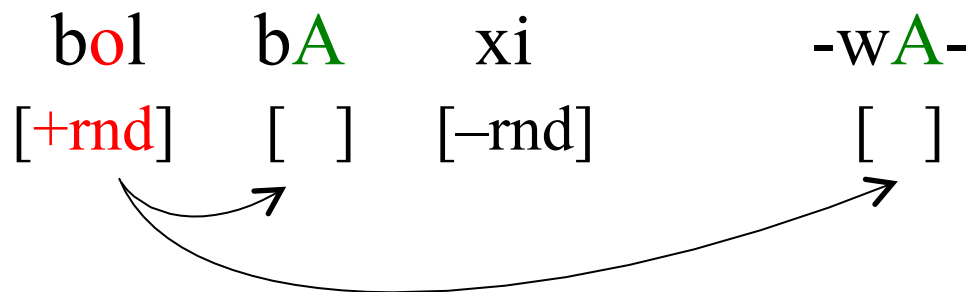
Walker (2014) argues that Baiyinna (henceforth B.) Oroqen round harmony does not operate in this way.

Rather, she proposes that a single trigger may be related non-iteratively to multiple targets -- of which all but one are necessarily nonlocal in the sense of Nevins (2010).



Introduction

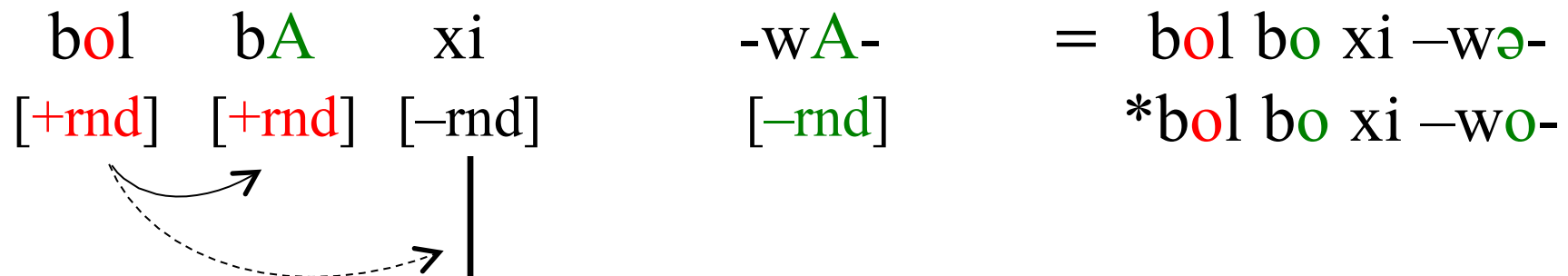
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While trigger-target relations need not be local, Walker (2014: 510) nevertheless requires that round harmony ‘is local with respect to propagation; that is, harmony proceeds only among adjacent syllables.’

That is, a trigger can ‘see over’ an intervening vowel that undergoes harmony, but *not* over a vowel that does not require the harmonic feature; this is certainly an unconventional view of locality.



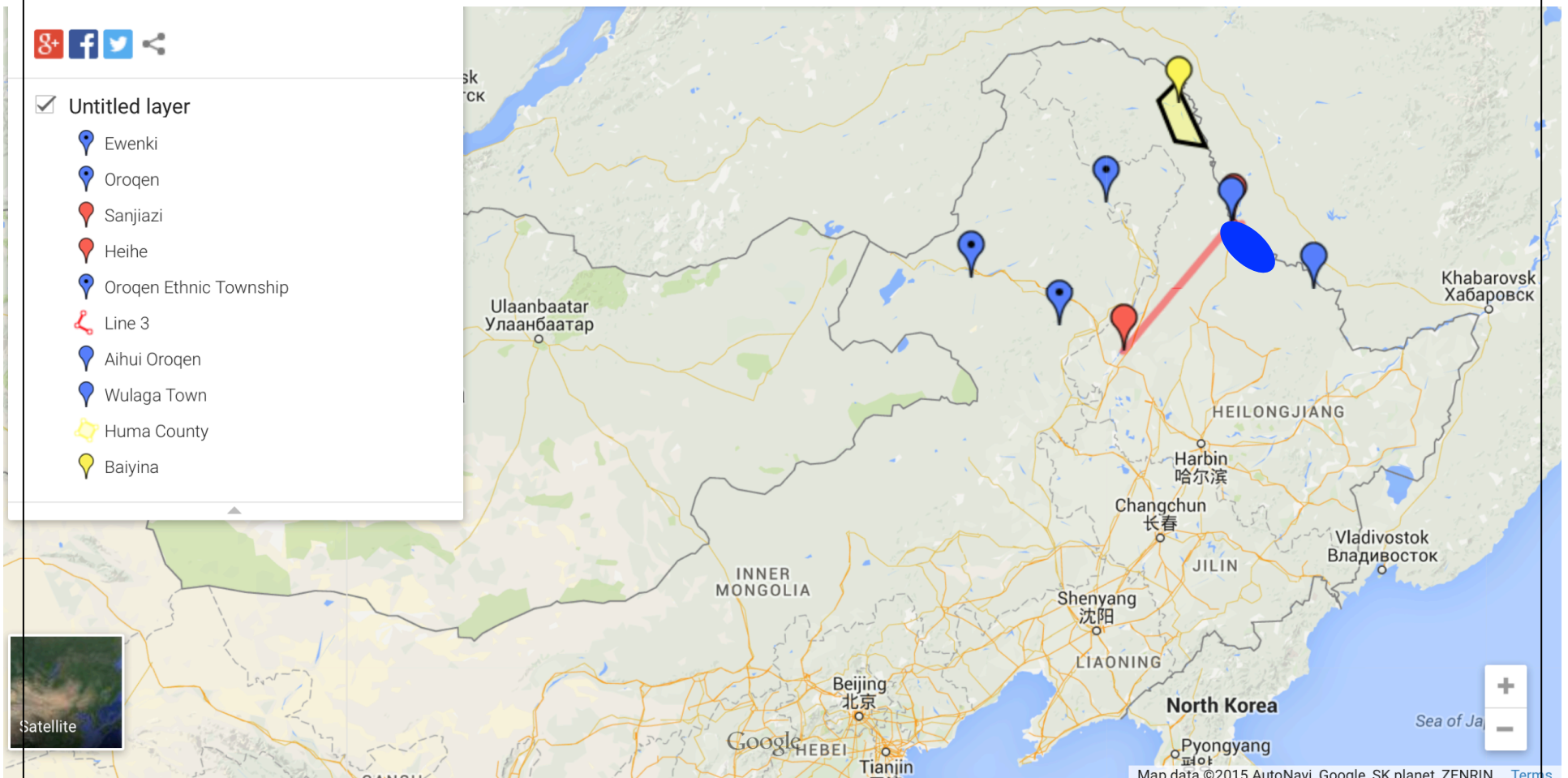
Introduction

We will argue that B. Oroqen does not require this kind of analysis.

We will show that it has the same stem-to-suffix harmony rule as has been proposed for Xunke (X.) Oroqen and for Classical Manchu, other languages in the Manchu-Tungusic family.

We will propose an analysis that observes locality, and which takes account of the similarity between Bayinna and these other Manchu-Tungusic dialects.

Map of B. and X. Oroqen



The yellow pin at the top is Bayinna, in Huma County (China). Xunke is below it in the blue circled area. Whaley & Li (2000) classify B. as Northeastern and X. as Southeastern Oroqen.

Introduction

The talk is organized as follows:

- We will begin by presenting an analysis of the basic facts of stem-to-suffix round harmony in Oroqen.
- We then present Walker's analysis of B. Oroqen harmony,
- and show why we think it is based on an incorrect conflation of stem-to-suffix harmony with stem-internal constraints on vowel co-occurrence.
- We will then propose that the facts of B. shed new light on an odd restriction on round harmony in all these dialects.

In sum, we argue that our analysis gives a better account of the facts of both dialects of Oroqen, and maintains the iterative nature of vowel harmony.

Stem-to-Suffix Round Harmony in Oroqen

The basic facts of stem-to-suffix round harmony are common to all Oroqen dialects.

Round harmony in Oroqen

Only the non-high vowels /ɔ, ɔɔ, o, oo/ and /a, aa, ə, əə/ participate in round harmony in Oroqen (Hu 1986; Li 1996; Zhang 1995, 1996).

 = *needy*

Oroqen

 = *source*

/i/ /ii/		/u/ /uu/
/ɪ/ /ɪɪ/		/ʊ/ /ʊʊ/
/ee/	/ə/ /əə/	/o/ /oo/
/ɛɛ/	/a/ /aa/	/ɔ/ /cɔ/

Round harmony in Oroqen

The non-high round vowels are also subject to restrictions on where they may occur in a word; more on this later.

 = *needy*

Oroqen

 = *source*

/i/ /ii/		/u/ /uu/
/ɪ/ /ɪɪ/		/ʊ/ /ʊʊ/
/ee/	/ə/ /əə/	/o/ /oo/
/ɛɛ/	/a/ /aa/	/ɔ/ /ɔɔ/

Round harmony in Oroqen

The front non-high vowels /ee, εε/ seldom occur in suffixes; when they do, they do not harmonize.

 = *needy*

Oroqen

 = *source*

/i/ /ii/

/u/ /uu/

/ɪ/ /ɪɪ/

/ʊ/ /ʊʊ/

/ee/

/ə/ /əə/

/o/ /oo/


/εε/

/a/ /aa/


/ɔ/ /ɔɔ/


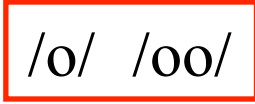
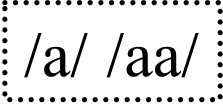
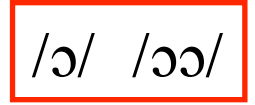
Round harmony in Oroqen

The high round vowels /ʊ, ʊʊ, u, uu/ neither trigger nor participate in round harmony, and may occur freely in any position in a word

 = *needy*

Oroqen

 = *source*

/i/ /ii/		/u/ /uu/
/ɪ/ /ɪɪ/		/ʊ/ /ʊʊ/
/ee/	 /ə/ /əə/	 /o/ /oo/
/ɛɛ/	 /a/ /aa/	 /ɔ/ /ɔɔ/

RTR harmony in Oroqen

All vowels must harmonize with respect to RTR. In Xunke, /ɪ, ʌ/ have merged with /i, ii/. We will not be concerned with this type of harmony here.

 = *needy*

Oroqen

 = *source*

/i/ /ii/		/u/ /uu/
/ɪ/ /ʌ/		/ʊ/ /uʊ/
/ee/	/ə/ /eə/	/o/ /oo/
/ɛɛ/	/a/ /aa/	/ɔ/ /cɔ/

Positional restrictions in Oroqen

Non-high round (henceforth **NHR**) vowels in Oroqen must ordinarily occur in a sequence that starts at the left edge of a word.

That is, for a **NHR** vowel to occur in the second syllable of a word or further, a **NHR** vowel must occur in the first or preceding syllable.

kɔrɔ

‘terrible’

*kirɔ

oŋkoo-

‘rain heavily’

*uŋkoo-

Positional restrictions in Oroqen

A long **NHR** vowel may occur alone in a monosyllabic stem.

But a short **NHR** vowel may not occur by itself in a stem: it must be followed by another vowel in the next syllable.

mɔɔ ‘tree, wood’

dʒoog ‘chin’

*mɔ, *mɔt

*dʒog, *dʒo

Round harmony in Oroqen

It was proposed by Zhang & Dresher (1996) and Zhang (1996) that for [+round] to be a legal donor, it must be anchored in two successive syllables (see also Walker 2001).

For some reason, vowel harmony fails when [+round] occurs only in the initial syllable.

C	A	C	A	-	C	A
	σ		σ			σ
	[+rnd]	[+rnd]		←	[]	

C	A	A	-	C	A
	σ				σ
	[+rnd]		← X		[]

Round harmony in Oroqen

Thus, a needy suffix harmonizes when it follows a stem that contains two short **NHR** vowels, like ‘the fish’.

Harmony also occurs when the stem has a short **NHR** vowel followed by a long **NHR** vowel, as in ‘boil’,

or when the stem has a long **NHR** vowel followed by a short **NHR** vowel, as in ‘moan’.

But there is no harmony when the stem has a single long **NHR** vowel, as in ‘the tree’, due to the two-syllable donor requirement

ɔɫɔ-wɔ *ɔɫɔ-wa

‘fish DEF.OBJ’

oɫoo-ro *oɫoo-rə

‘boil PRES.TNS’

moo-ro-ro *moo-ro-rə

‘moan PRES.TNS’

mɔɔ-wa *mɔɔ-wɔ

‘tree DEF.OBJ’

Round harmony in Oroqen

[+round] cannot be copied by a high vowel, as shown by ‘of a stone’; only [-high] suffix vowels are needed.

Nor can it skip a vowel as in ‘the boar’; all values of [\pm round] are visible for the search.

dʒɔɭ-ŋi

‘stone POSS’

tɔɭki-wa *tɔɭki-wɔ

‘boar DEF.OBJ’

Round harmony

We sum up the operation of round harmony below:

Non-high suffix vowels (represented by **A**) are **needy** for the feature **[round]** and seek it from vowels on their left.

[+round] must be supplied by a non-high vowel that follows another **NHR** vowel.

C	A	C	A	-	C	A
	σ		σ			σ
	[+rnd]		[+rnd]	←		[]

C	A	C	A	C	I	-	C	A
	σ		σ		σ			σ
	[+rnd]		[+rnd]		[±rnd]	←		[]

Round harmony

We sum up the operation of round harmony below:

Locality, based on all-values of $[\pm\text{round}]$, thereby becomes the adjacent leftward syllable.

C	A	C	A	-	C	A
	σ		σ			σ
	[+rnd]		[+rnd]	←		[]

C	A	C	A	C	I	-	C	A
	σ		σ		σ			σ
	[+rnd]		[+rnd]		[±rnd]		← x	[]

Round harmony

We sum up the operation of round harmony below:

Locality, based on all-values of $[\pm\text{round}]$, thereby becomes the adjacent leftward syllable.

When a donor can be found in an adjacent syllable, the suffix surfaces as $[\text{+round}]$; otherwise, it receives $[\text{-round}]$ by default.

C	A	C	A	-	C	A
	σ		σ			σ
	$[\text{+rnd}]$		$[\text{+rnd}]$			$[\text{+rnd}]$

C	A	C	A	C	I	-	C	A
	σ		σ		σ			σ
	$[\text{+rnd}]$		$[\text{+rnd}]$		$[\pm\text{rnd}]$			$[\text{-rnd}]$

Round Harmony in Classical Manchu

Before turning to Walker's alternative analysis, we briefly review the behaviour of NHR vowels in Classical Manchu (a related language, not the parent of Oroqen), which clearly display the same "two-syllable condition" on donors as Oroqen.

Positional restriction in Classical Manchu

As in Oroqen, the **NHR** vowel in Manchu must occur in a sequence that starts at the left edge of a word.

pɔtʂ'ɔ

‘colour’

*pitʂ'ɔ

fɔχɔlɔn

‘short’

*fuxɔlɔn

Positional restriction in Classical Manchu

As in Oroqen, the **NHR** vowel in Manchu must occur in a span that starts at the left edge of a word.

An **NHR** vowel, may occur by itself in a stem, whether short or long. Stems of the former type do not occur in Oroqen.

tɔ-

‘alight’
(of birds)

tɔɔ

‘cross’
(a river)

Round harmony in Classical Manchu

However, when a stem has a single **NHR**, short /ɔ/ or long /ɔɔ/, a **needy** suffix does not harmonize, as shown by the examples below.

As in Oroqen, for [+round] to serve as a donor it must be preceded by another **NHR** vowel (Zhang & Drescher 1996, Zhang 1996, Walker 2001).

tɔ-na *tɔ-nɔ 'alight in swarm'	pɔtʂ'ɔ-ŋgɔ *pɔtʂ'ɔ-ŋga 'coloured'
tɔɔ-na *tɔɔ-nɔ 'go to cross river'	fɔχɔlɔ-qɔn *fɔχɔlɔ-qan 'somewhat short'

Round Harmony in Baiyinna Oroqen: Li (1996) and Walker (2014)

We turn now to a different analysis of round harmony, proposed by Walker (2014), building on Li's (1996) account of harmony in Bayinna Oroqen.

Li's (1996)'s analysis of B. Oroqen

Li (1996) considers that round harmony applies within stems as well as from stems to suffixes.

He thus interprets the stems below as involving stem-internal harmony triggered by a single initial short **NHR** vowel.

$\overset{\curvearrowright}{\text{tʃolpon}}$ *tʃolpən

‘morning star’

$\overset{\curvearrowright}{\text{goloo}}$ *golaa

‘log’

Li's (1996) analysis of B. Oroqen

Li (1996) concludes that round harmony in B. is not triggered by a long **NHR** vowel; compare the examples below.

In 'morning star' an initial short /**o**/ is followed by another /**o**/ within the stem; it may not be followed by /**ə**/. The long /**ɔɔ**/ in 'handbell', however, is followed by /**a**/.

According to Li (1996), a long **NHR** vowel may not be followed by /**ɔ**/ or /**o**/ *except in loanwords*, such as 'kitchen knife'.

tʃ**o**l**o**n

'morning star'

k**ɔɔ**ŋ**a**kt**a**-

'handbell'

b**o**o**o**-

'kitchen knife'
(Chn.)

Walker's (2014) analysis of B. Oroqen

Walker (2014) proposes a formal account of B. Oroqen round harmony that builds on Li's (1996) analysis.

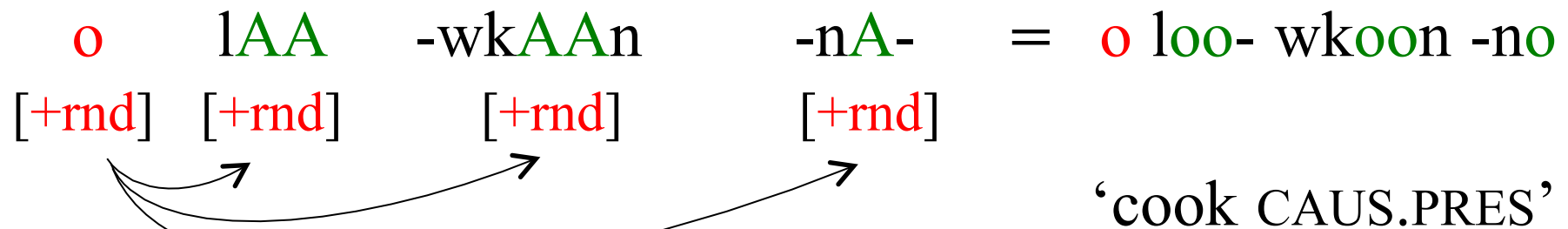
She thus assumes that the same harmony mechanism applies both within stems and in stem-suffix sequences, presumably because doing so might avoid 'the duplication problem'.

Following Li (1996), she assumes that a single short **NHR** vowel can trigger harmony, but that a long one cannot.

Walker's (2014) analysis of B. Oroqen

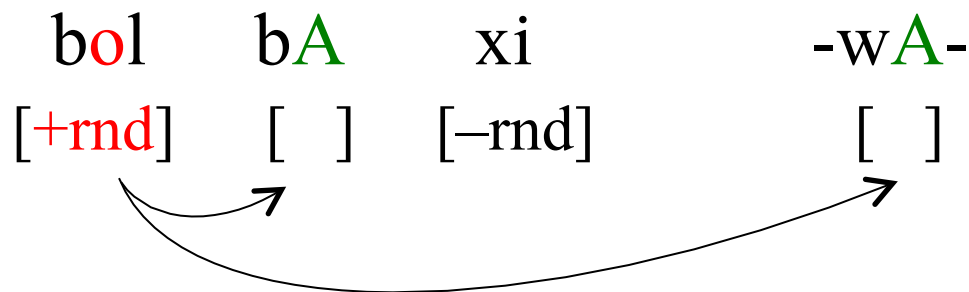
However, a long vowel *can* nevertheless transmit a [+round] feature if it is part of a continuous span that originates with a trigger, as shown schematically below.

Starting from the premise that only short **NHR** vowels can trigger harmony, Walker (2014) concludes that trigger-target relations may be non-local, as in the two suffixes below.



Walker's (2014) analysis of B. Oroqen

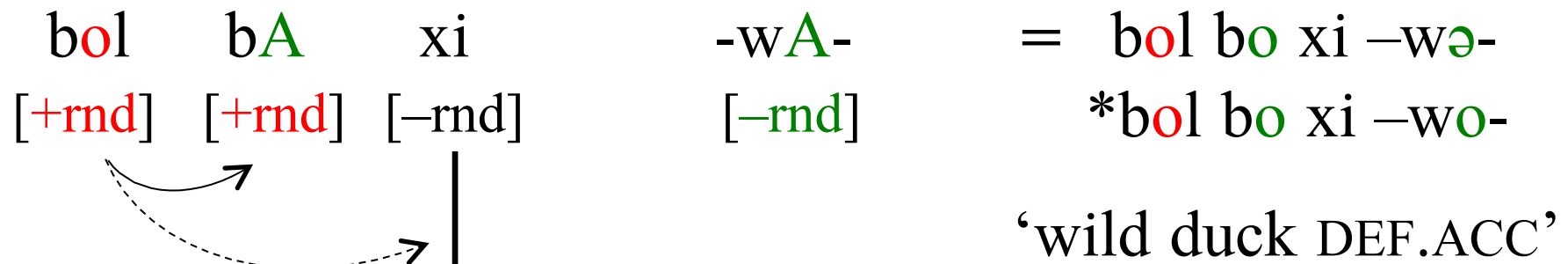
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That is, a trigger can 'see over' an intervening vowel that undergoes harmony, but *not* over a vowel that does not require the harmonic feature.



Walker's (2014) analysis of B. Oroqen

This analysis raises a few concerns:

- This kind of 'non-local locality' is quite unusual.
- The conflation of stem-internal and stem-to-suffix harmony is not supported by the data.

While one can see how the facts of B. Oroqen as set out by Li (1996) could lead Walker (2014) to this analysis, a review of the stem-internal data leads us to different conclusions.

An Alternative Analysis of Stem-internal Harmony

Stem-internal harmony: Another analysis

Recall that Li (1996) and Walker (2014) propose that a single short **NHR** vowel causes rounding in a following **NHR** vowel within a stem, but a single long **NHR** vowel does not.

Therefore words like *boodo-* must be treated as exceptions to the regular pattern.

Let us adopt some terminology for these types of words for ease of reference.

ts[↗]olpon

k^{x↗}ooŋakta-

boodo-

Stem-internal harmony: Another analysis

Type O · O(:) are words with an initial short /o/ or /ɔ/ followed by a short or long /o:/ or /ɔ:/ in the second syllable.

Type O: · A(:) are words with an initial long /o:/ or /ɔ:/ followed by a short or long /ə:/ or /a:/ in the second syllable.

Type O: · O are words with an initial long /o:/ or /ɔ:/ followed by a short /o/ or /ɔ/ in the second syllable.

Li (1996) writes that Type O: · O words are exceptional.

Type O · O(:) tʃ[↗]olpon

Type O: · A(:) k^{x↗}oŋakta-

Type O: · O boodo-

How anomalous are words of Type O: · O?

There are several problems with this analysis, however:

- First, some account still needs to be given of such words: how does the second short round vowel get there?
- Second, to our knowledge there are no such exceptions in stem-to-suffix harmony: that is, cases where an initial long vowel exceptionally causes a suffix vowel to harmonize. That is, there is a difference in patterning within stems and in stem-suffix combinations that needs to be accounted for.

Stem-to-Suffix

m_{oo}-wa

*m_{oo}-w_o

Within Stems

k_{oo}ηakta-

b_{oo}d_o-
? →

Are these loanwords special in Oroqen?

- Third, Li (1996) does not provide evidence that these loanwords have not been assimilated into the native system.

We do not know if speakers are aware that such words are special; there may be considerable variation in this respect.

Moreover, there are cases where Oroqen speakers adapt Chinese loanwords to fit the native pattern.

Adaptation of loanwords

All Oroqen words must meet a requirement that they have minimally two moras: a long vowel in a monosyllable may or may not be followed by a consonant, but a short vowel in a monosyllable must be followed by a consonant.

Zhang (1996: 176) observes: “The bimoraic requirement is not only observed in Oroqen native words, but also in the loanwords from Chinese” (Hu 1986; ZLZ; Han & Meng 1993).

bii

‘I’

muu

‘water’

əəm

‘medicine’

dʒuur

‘two’

bər

‘bow’

kat-

‘reap’

tur

‘soil’

ʊg-

‘ride’ (a horse)

Adaptation of loanwords

According to Zhang, when a Chinese word is an open syllable, it is borrowed in Oroqen as an open syllable with a long vowel.

If the Chinese word ends in a consonant, it is borrowed with a short vowel in Oroqen.

This shows that vowel length can be adjusted to make a word fit the native pattern.

Chinese	Oroqen		Chinese	Oroqen	
la	laa	‘candle’	gang	gaŋ	‘steel’
mu	muu	(a Chinese unit)	cun	tʃun	(a Chinese unit)
wa	waa	‘tile’	sheng	səŋ	‘province’

How anomalous are words of Type O: · O?

- Fourth, it is not clear that the data support the notion that Type O: · A(:) words like 'handbell' are regular and that Type O: · O words like 'kitchen knife' are exceptional.

Type O: · A(:)

k^oŋ^aakta-

'handbell'

Type O: · O

bo^odo-

'kitchen knife'

(Chn.)

Distribution of NHR vowels in stems

The following table shows the possible vowel sequences that may occur in the first and second syllable of the root of a word:

	i	i:	e	u	u:	o	o:	ə	ə:	ɛ	ʊ	ɔ	ɔ:	a	a:	
i	+	+	+	+	+	-	-	+	+	-	+	+	-	+	+	
i:	-	-	-	-	-	-	-	+	-	-	-	-	-	+	-	
e	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
u	+	+	+	+	+	-	-	+	+	-	-	-	-	-	-	
u:	+	-	-	+	-	-	-	+	+	-	-	-	-	-	-	
o	-	-	-	-	-	+	+	+	-	-	-	-	-	-	-	
o:	-	-	-	-	-	+	+	+	-	-	-	-	-	-	-	
ə	+	+	+	+	+	-	-	+	+	-	-	-	-	-	-	
ə:	+	-	-	+	-	-	-	+	-	-	-	-	-	-	-	
ɛ	+	-	-	-	-	-	-	-	-	+	-	-	-	+	-	
ʊ	+	-	-	-	-	-	-	-	-	+	+	+	-	-	+	+
ʊ:	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
ɔ	+	-	-	-	-	-	-	-	-	+	-	+	+	+	+	
ɔ:	+	-	-	-	-	-	-	-	-	+	+	-	+	-	+	+
a	+	+	+	-	-	-	-	-	-	+	+	+	-	-	+	+
a:	+	-	-	-	-	-	-	-	-	-	+	-	-	-	+	+

This table appears on p. 20 of *The Oroqen Language* (1989) by Zhang Yanchang, Li Bing & Zhang Xi (ZLZ), based on their fieldwork on Xunke Oroqen.

It takes a more permissive approach to possible stem-initial vowel sequences than do Li Bing and Zhang Xi in their subsequent work (Li 1996; Zhang 1995, 1996).

Distribution of NHR vowels in stems

The following table shows the possible vowel sequences that may occur in the first and second syllable of the root of a word:

	i	i:	e	u	u:	o	o:	ə	ə:	ɛ	ʊ	ʊ:	ɔ	ɔ:	a	a:
i	+	+	+	+	+	-	-	+	+	-	+	+	-	-	+	+
i:	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+	-
e	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
u	+	+	+	+	+	-	-	+	+	-	-	-	-	-	-	-
u:	+	-	-	+	-	-	-	+	+	-	-	-	-	-	-	-
o	-	-	-	-	-	+	+	+	-	-	-	-	-	-	-	-
o:	-	-	-	-	-	+	+	+	-	-	-	-	-	-	-	-
ə	+	+	+	+	+	-	-	+	+	-	-	-	-	-	-	-
ə:	+	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-
ɛ	+	-	-	-	-	-	-	-	-	+	-	-	-	-	+	-
ʊ	+	-	-	-	-	-	-	-	-	+	+	+	-	-	+	+
ʊ:	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
ɔ	+	-	-	-	-	-	-	-	-	-	+	-	+	+	+	+
ɔ:	+	-	-	-	-	-	-	-	-	+	+	-	+	-	+	+
a	+	+	+	-	-	-	-	-	-	+	+	+	-	-	+	+
a:	+	-	-	-	-	-	-	-	-	-	+	-	-	-	+	+

It shows that long /o:/ may be followed by an /o/ as well as by /ə/, not marking these words as having special status.

Similarly, it shows long /ɔ:/ able to be followed by /ɔ/, as well as by /a/ and /a:/.

This table, however, just lists the sequences observed in the data, however rare; it does not give numbers or relative frequency.

How anomalous are words of Type O: · O?

However, ZLZ includes a vocabulary list of 1034 words. This list includes 28 words whose first syllable has O: (/o:/ or /ɔ:/).

Of these, 7 are Type O: · A(:) and 5 are Type O: · O.

Type O: · A(:)

kə:kan	‘child’
tə:lga	‘pillar’
də:la:	‘inside’
nə:da:	‘to give up, let go’
ɔ:ŋkar	‘certainly’
ko:rgə	‘bridge’
ɔ:ŋkəki	‘horizontal’

Type O: · O

mə:tʃən	‘difficulty’;
mə:rɔ	‘to bleat’ (an ox or cow)
ko:to	‘knife, sword’;
mo:go	‘mushroom, fungus’;
mo:ro	‘to moan’;

How anomalous are words of Type O: · O?

The other words with first syllable O: include 7 monosyllables, and 9 words with O: followed by a high vowel or /e:/ or /ɛ:/.

Type O: · O is the smallest group, but not by much.

We conclude that the numbers do not support the notion that Type O: · O is anomalous while Type O: · A(:) is regular.

Type O: · A(:)

kə:kan	‘child’
tə:lga	‘pillar’
də:la:	‘inside’
nə:da:;	‘to give up, let go’
o:ŋkar	‘certainly’
ko:rgə	‘bridge’
o:ŋkəki	‘horizontal’

Type O: · O

mə:tçən	‘difficulty’;
mə:rə	‘to bleat’ (an ox or cow)
ko:to	‘knife, sword’;
mo:go	‘mushroom, fungus’;
mo:ro	‘to moan’;

Counting the words

Another problem for stem-internal round harmony initiated by a single short **NHR** vowel is that, within stems, we have sporadically /o/ followed by /a/, which is not consistent with any harmony approach to stem-internal patterns.

The numbers in ZLZ's vocabulary list for all words starting with short O (/o/ or /ɔ/) are shown below.

Type	# of words
Type O · O	60
Type O · O:	10
Type O · I/U/E	8
Type O · A	6
Type #(C)OC ₀	1

Counting the words

Type O · O and O · O: words are the expected type. Zhang (1995, 1996), following Hu (1986), who worked in Alihe (Central Oroqen), proposed a constraint that a short initial /o/ or /ɔ/ must be followed by another **NHR** vowel.

This constraint is a MSC; it would rule out the remaining three types: O followed by a high vowel or E, and O followed by A.

Type	# of words
Type O · O	60
Type O · O:	10
Type O · I/U/E	8
Type O · A	6
Type #(C)OC ₀	1

In the low vowels, it has the same effect as a rule of stem-internal round harmony triggered by initial O.

Counting the words

But harmony would not account for the absence of Type O · I/ U/ E or of Type #(C)OC₀ (O in a monosyllabic stem or word).

Zhang (1995) points out that some exceptions to the MSC can be found in ZLZ. They show such forms only with /ɔ/, not /o/.

Type	# of words
Type O · O	60
Type O · O:	10
Type O · I/U/E	8
Type O · A	6
Type #(C)OC ₀	1

The point is that we need MSC'S (or what some call 'licensing conditions') to account for a variety of tendencies and restrictions that govern vowel distribution within stems.

Morpheme Structure Conditions

We need a MSC to account for why **NHR** vowels must normally occur in initial position if they occur anywhere in a stem.

We need a MSC to account for why **Types O · I/U/E** and **#(C)OC₀** are relatively rare.

The very similar rarity of **Type O · A** should be handled in the same way.

Type	# of words
Type O · O	60
Type O · O:	10
Type O · I/U/E	8
Type O · A	6
Type #(C)OC ₀	1

Summary

We have argued that we should distinguish between stem-to-suffix round harmony, which is the same in the three languages we have looked at, and stem-internal co-occurrence restrictions, which may differ in their details across these languages, or even from speaker to speaker.

If we treat the stem-internal distributional facts with MSC's, we can preserve a simple local harmony mechanism in which undergoers are not distinct from sources.

A remaining puzzle

There is one respect in which our round harmony rule is not entirely simple:

There remains the odd restriction that harmony only occurs when [+round] is anchored in two successive syllables.

Recall these examples from Classical Manchu, which shows this restriction most clearly:

tɔ-na

*tɔ-nɔ

‘alight in swarm’

pɔtʂ'ɔ-ŋgɔ

*pɔtʂ'ɔ-ŋga

‘coloured’

A New Interpretation of the ‘Bisyllabic
Trigger’ Condition in a Number of
Manchu-Tungusic Dialects

Exceptional NHR vowels in B. Oroqen

Walker (2014) calls attention to the behaviour of some exceptional **NHR** vowels in B. Oroqen discussed by Li (1996).

There are two types of cases in which **NHR** vowels **can** occur in the middle of a word without being preceded by another **NHR** vowel, in violation of otherwise regular generalizations:

- Certain exceptional suffixes have a **NHR** vowel no matter what other vowels precede them

ətʃəxə-n**ɔ**r

‘paternal uncles’

Exceptional NHR vowels in B. Oroqen

Walker (2014) calls attention to the behaviour of some exceptional **NHR** vowels in B. Oroqen discussed by Li (1996).

There are two types of cases in which **NHR** vowels **can** occur in the middle of a word without being preceded by another **NHR** vowel, in flagrant violation of a MSC that is very widespread:

- Among the disharmonic loanwords that have entered the language are some that have a word-internal **NHR** vowel that is preceded by a non-**NHR** vowel.

ətʃəxə-nɔr

‘paternal uncles’

kinɔ-

‘film’ (Russian)

Exceptional NHR vowels in B. Oroqen

As if these **NHR** vowels were not exceptional enough, they do one other astonishing thing:

ətʃəxə-nɔr

‘paternal uncles’

kinɔ-

‘film’ (Russian)

Exceptional NHR vowels in B. Oroqen

As if these **NHR** vowels were not exceptional enough, they do one other astonishing thing:

An exceptional **NHR** vowel that is not preceded by another **NHR** vowel **does** act as a round harmony donor to a needy vowel in a following syllable.

Li's discussion suggests that harmony occurs regularly in such cases.

ətʃəxə-nɔr-wɔ-t

‘paternal uncles DEF.ACC’

kinɔ-wɔ

‘film’ (Russian)

A revised constraint on round harmony

This leads us to ask: Why do exceptional **NHR** vowels pattern with bisyllabic sequences and not with single stem-initial **NHR** vowels? The generalization is:

In all cases, a suffix vowel that needs a [\pm round] feature obtains it from a **NHR** vowel that is **not stem initial**.

A constraint that initial vowels may not be harmony donors appears to be particularly odd in a language family where bearers of the harmonic feature are restricted to stem-initial and adjacent positions.

A revised constraint on round harmony

But perhaps these facts are connected; it could be that the non-initiality condition has its origins in the particular historical distribution of **NHR** vowels in the Manchu-Tungusic languages.

Whatever the explanation turns out to be, it remains to revise our condition on stem-to-suffix harmony in the three languages:

[+round] must be supplied by a non-high vowel that follows another **NHR** vowel.



[+round] must be supplied by a non-high vowel that is not stem initial.

Conclusions

We have shifted the focus of explanation from

‘Why does Oroqen suffixal harmony have a two-syllable requirement?’

to

‘Why does it have a requirement on copying from non-initial vowels?’,

which no doubt leads to further questions and research.

Conclusions

We have also shifted the focus from

‘Why must [+round] be docked within two moras in the stem?’

to

‘How much systematicity is there to the MSCs (or their licensing equivalents) in the stem?’,

which connects to much work on whether Altaic speakers pick up on static patterns in the lexicon: e.g., Zimmer 1969 and Harrison & Kaun 2001.

Gràcies!

References

- Dresher, B. Elan & Xi Zhang. 2005. Contrast and phonological activity in Manchu vowel systems. *Canadian Journal of Linguistics* 50: 45–82.
- Harrison, K. David and Abigail Kaun. 2000. Pattern-Responsive Lexicon Optimization. In *Proceedings of NELS 30*.
- Hu, Zhengyi. 1986. *Elunchunyu jianzhi* [A grammatical sketch of Oroqen]. Beijing: Minzu Chubanshe.
- Li, Bing. 1996. *Tungusic vowel harmony*. The Hague: Holland Academic Graphics.
- Nevins, Andrew. 2010. *Locality in vowel harmony*. Cambridge, Mass.: MIT Press.
- Walker, Rachel. 2001. Round licensing and bisyllabic triggers in Altaic. *Natural Language and Linguistic Theory* 19: 827–878.

- Walker, Rachel. 2014. Nonlocal trigger-target relations. *Linguistic Inquiry* 45: 501–523.
- Whaley, Lindsay J., and Fengxiang Li. 2000. Oroqen dialects. *Central Asiatic Journal* 44: 105–130.
- Zhang, Xi. 1995. Vowel harmony in Oroqen (Tungus). In Päivi Koskinen (ed.), *Toronto Working Papers in Linguistics* 14: 161–174.
- Zhang, Xi. 1996. Vowel systems of the Manchu-Tungus languages of China. Doctoral dissertation, University of Toronto.
- Zhang, Xi, and B. Elan Dresher. 1996. Labial harmony in written Manchu. *Saksaha: A Review of Manchu Studies* 1: 13–24.
- Zhang, Yan-Chang, Bing Li, and Xi Zhang (ZLZ). 1989. *The Oroqen language*. Changchun: Jilin University Press.
- Zimmer, Karl E. 1969. Psychological Correlates of Some Turkish Morpheme Structure Conditions. *Language* 45: 309–321.

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