Diminutive sound symbolism in multimorphemic words in Umatilla Ičiškíin/Sahaptin

Gretchen Kern

Umatilla Ičiškíin/Sahapin

https://nauticalcharts.noaa.gov/updates/wp-content/uploads/2022/12/CRITFC_graphic.png

Vocabulary pairs

miyánaš

child

miyálas

baby

Vocabulary pairs

wána

(Umatilla) river

wála

(McKay) creek

Vocabulary pairs

wíwnu

huckleberry

wiwlúwiwlu

grouse whortleberry

Vocabulary pairs

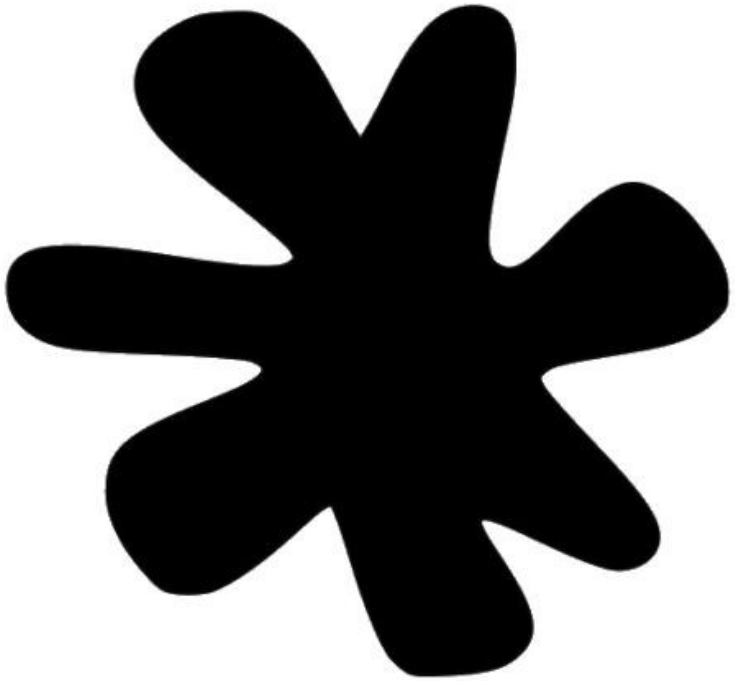
ḳáyḳay

elk calf

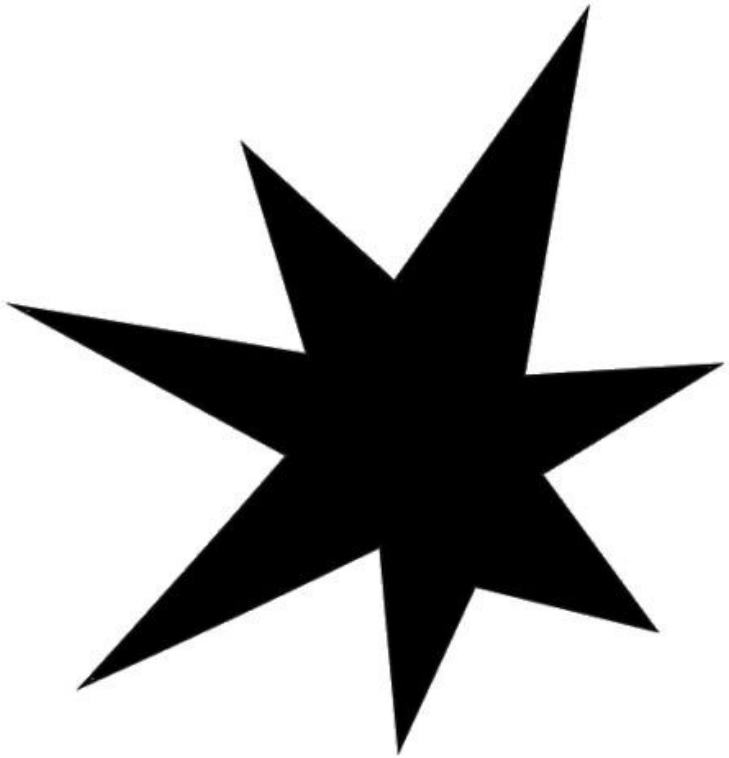
ǩáyǩay

young child

Sound symbolism



bouba

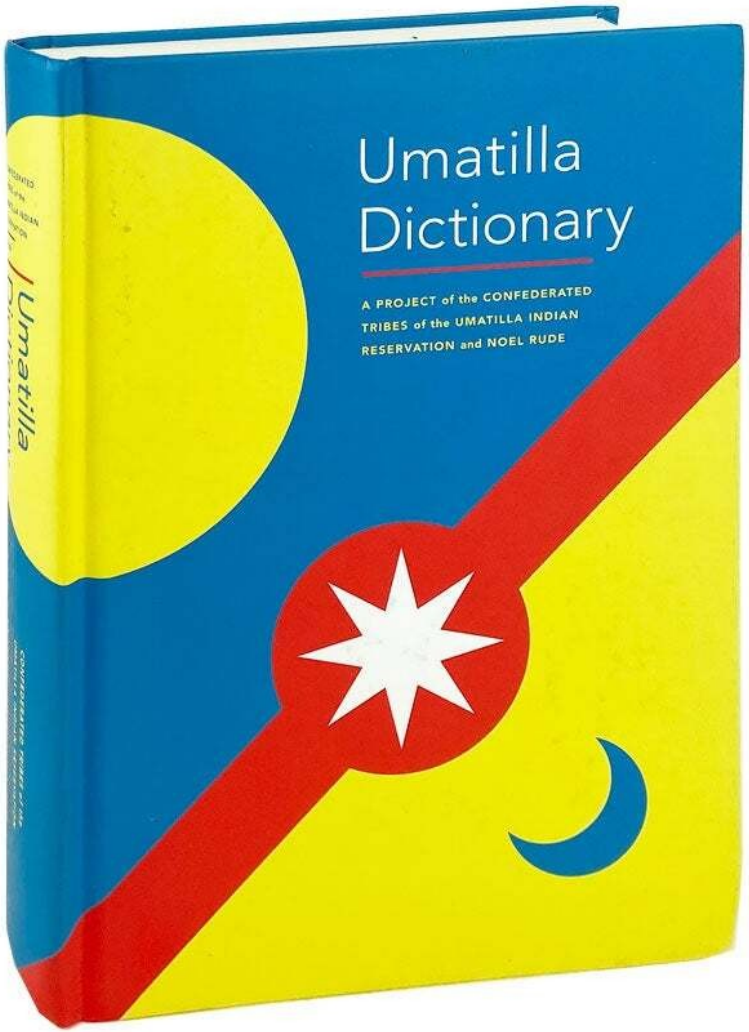


kiki

Spread of consonant symbolism

Based on Nichols, J. (1971). Diminutive Consonant Symbolism in Western North America. *Language 47*(4), 826–848.

Umatilla Dictionary



- Published in 2014
- Written by Noel Rude
- Primarily based on speech of Twáway, Inez Spino Reves
- Available online: http://dictionary.ctuir.org

Sahaptin sound symbolism

Plain	Diminutive
š č c̓̌	s c c̓
n	l
q q̓ qʷ q̓ʷ	k k̓ kʷ k̓ʷ
x̣ x̣ʷ	x xʷ

Augmentative
s ⟹ ɬ

Consonant inventory of Umatilla

	Bilabial	*Alveolar*	*Post-alveolar*	*Velar*	*Uvular*	*Glottal*
Plosive	p	t		k	q	ʔ
Ejective plosive	pˀ	tˀ		kˀ	qˀ	
Labialized plosive				k^w	q^w	
Ejective labialized plosive				$k^{\prime w}$	$q^{\prime w}$	
Fricative		s	š	x	χ	h
Labialized fricative				x^w	$χ^w$	
Affricate		c	č			
Ejective affricate		cˀ	čˀ			
Lateral fricative		ɬ				
Lateral affricate		ƛ				
Ejective lateral affricate		ƛˀ				
Lateral approximant		l				
Nasal	m	n				
Glide	w		y			

Monomorphemic examples

	English (plain⇒diminutive)	Plain	Diminutive	Consonants
a.	child ⇒ baby	miyánaš	miyálas	n⇒l, š⇒s
b.	river ⇒ stream	wána	wála	n⇒l
c.	sharp ⇒ very sharp	čím	ćím	š⇒s
d.	right (direction, noun) ⇒ very correct	niwít	liwít	n⇒l
e.	mashed ⇒ finely mashed (soft, shriveled)	q̓^{w}áan	k̓^{w}áal	q̓^{w}⇒k̓^{w}, n⇒l
f.	large-scale sucker ⇒ generic small fish	x̣úun	xúlxul	x̣⇒x, n⇒l
g.	elk calf ⇒ small elk calf/child	q̓ayq̓áy	k̓ayk̓áy	q⇒k
h.	canyon ⇒ ravine	x̣iwúš	xiwíis	x̣⇒x, š⇒s

Alternating morphemes

English meaning	Plain	Diminutive
cutting	šá-	sá-
causative	šapá-	sapá-
distributive causative	šáp-	sáp-
with the eyes	wán-	wál-
hurriedly	winá-	wilá-
in a line	šu-	su-
motion inside	-naylač	-laylak
lean against	-nanṗa	-laḷṗa
purpose nominalizer	-aš	-as

English meaning	Plain	Diminutive
patient nominalizer	-š	-s
past participle	-ní	-lí
going along	-náyti	-láyti
down	-anwi	-alwi
ending	-náq̓i	-lák̓i
out	-nayt	-layt
benefactive	-náyk̓ay	-láyk̓ay

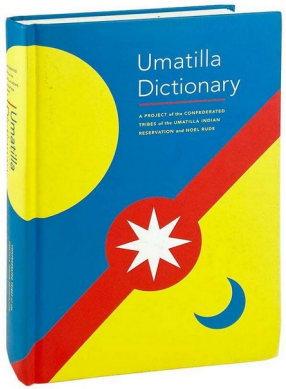
Non-alternating morphemes

English meaning	Plain	Diminutive
alone	Ø	-sá
into water	Ø	-luu
up in the air	Ø	-lawak
a tool	Ø	-ťáwas
without	-nut	Ø
a bush	-šway	Ø
a field	-aaš	Ø
directional	-ši	Ø
upon	-aša	Ø

Examples from the dictionary

"Curiously the word xʷíɬsaat 'old man' has diminutive sounds, thus suggesting something like 'little old man', whereas ɬmáma 'old lady' could imply 'big old lady'."

(Noel Rude, 2014:8)



Is xaslú 'star' diminutive even if there is no *x̣ašnú?

Building words – adding suffixes

	Plain suffix	Diminutive suffix
Plain base	(a) núq̓ʷaš núq̓ʷ- aš swallow-purpose.nominalizer ‘throat’	(b) q̓ímkas q̓ímk- as scrape-purpose.nominalizer.DIM ‘shoulder’
Diminutive(?) base	(c) ílukš íluk-š burn-patient.nominalizer ‘fire’	(d) ílukas íluk-as burn-purpose.nominalizer.DIM ‘firewood’

Building words – diminutive bases

(a) sáali
sá- ali
cutting.DIM-make.DIM
'to cut with scissors'
cf. aní- 'to make'

(b) sapaʔixáwas
sapa- ix- áwas
CAUS.DIM-clean.DIM-TOOL
'soap'
cf. íiẋ- 'to wash'

(c) táwaxicas
táwa- xic- as
pierce-throw.down.DIM-purpose.nominalizer.DIM
'stick game sticks'
cf. ẋič, 'throw down'

Building words – pairs of words

Diminutive	Plain
(a) sapacanpáwas sapa- canp- áwas CAUS.DIM-bite.DIM-tool 'bit, bridle'	(b) šapačanpáwas šapa-čanp-áwas CAUS-bite-tool 'bit, bridle'
(c) wiláalak^{w} wilá- alak^{w} hurriedly.DIM-leave.DIM 'to leave'	(d) wináanak^{w} winá- anak^{w} hurriedly-leave 'to leave through death'

Building words - mixed

Diminutive + diminutive + plain

(a) sapasunaytí
sapa- su- naytí
CAUS.DIM-in.a.line.DIM-going.along
'wheelbarrow'

Diminutive + plain + diminutive

(b) sapáx̣ʷluus
sapá- x̣ʷluu- s
CAUS.DIM-drink.lying.prone-patient.nominalizer.DIM
'fishing platform'

Diminutive (or plain) + diminutive + diminutive

(c) sapáƙɬilks (also attested as šapáƙɬilks)
sapá- ƙɬilk- s
CAUS.DIM-block.the.way.DIM-patient.nominalizer.DIM
'hider' (part of men's regalia)

Inflectional suffixes

(a)	alyáwašaaš útpas alyáwa-ša- aš útpas bet- CONT-1SG blanket 'I am putting the blanket out for bet'	(Rude, 2014:57)
(b)	isapálalp̓asaaš i- sapálalp̓a- sa- aš 3SG.SUBJ-take.picture- CONT-1SG 'he is taking my picture'	(Rude, 2014:265)
(c)	áwisxsaas á- wisx-sa- as 3OBV-sew- CONT-1SG 'I'm sewing it'	(Rude, 2014:421)

Inflectional suffixes - narrative

Naamí Sɬnwit ‘Our Language’ (Rude, 2014: 46-7)

	Plain (4 examples total)		**Diminutive** (10 examples total)
(a)	ásamx̣našanaataš á-samx̣na-ša-na-ataš 3OBV-talk.to-CONT-PST-1PL.INCL ‘We were talking to them’	(e)	pasɬnwisata pa-sɬnwi-sa-ta 3PL.SUBJ-speak-CONT-FUT ‘They will be speaking’
(b)	áp̓x̣nayiša á-p̓x̣nayi-ša 3OBV-remember-CONT ‘We remember’	(f)	iwáƛwisa i-wáƛwi-sa 3SG.SUBJ-lead-CONT ‘(language) is leading’
(c)	qqaanáyša qqaanáy-ša work-CONT ‘We are working’	(g)	paskúulisana pa-skúuli-sa-na 3PL.SUBJ-go.to.school-CONT-PST ‘They were going to school’
(d)	átimayišana á-timayi-ša-na 3OBV-write-CONT-PST ‘We were writing them’	(h)	isápsik̓ʷasa (x4) i-sápsik̓ʷa-sa 3SG.SUBJ-teach-CONT ‘He is teaching’

Beyond the word?

(a)	káatlam wiɨ̣á wiɨxalxalí long.DIM leg spider ‘daddy long-legs’	cf. káatnam ‘long’, wiɨ̣xaní ‘legged’

(b)	Ku pasɨ́nwisata páyš tanánki, Ku pa- sɨ́nwi-sa- ta páyš tanán- ki, and 3PL.SUBJ-speak-CONT-FUT maybe Indian-INSTR ‘And maybe they will be speaking in Indian,’

Summary of data

- **Only certain consonants participate**
- **Some affixes alternate**
  - May attach to plain or diminutive stems
  - Some preference for entire word to change to diminutive
- **Entire word (including inflectional suffixes) may shift to diminutive**
- **No evidence for shift beyond a word**

Phonological analysis

- Difficult for two reasons:
  - Distance
    - non-local process
    - resembles consonant harmony, but…
  - Consonants & changes involved
    - no shared features among participating consonants
    - no uniform changes in features in the shift to diminutive

Perception & phonetics

- Nichols (1971) – identifies “a higher tonality” or frequency of sounds as the phonetic basis shift for Sahaptin and a handful of other languages.
- Sounds produced towards the front of the mouth have higher frequency due to a smaller resonant chamber.
- Can raise frequency a bit, but not so much that original word is non-recoverable by listeners.
- Non-participating consonants have no perceptually-similar, higher-frequency target.

Consonant inventory of Umatilla

	Bilabial	*Alveolar*	*Post-alveolar*	*Velar*	*Uvular*	*Glottal*
Plosive	p	t		k	q	ʔ
Ejective plosive	pʼ	tʼ		kʼ	qʼ	
Labialized plosive				k^w	q^w	
Ejective labialized plosive				k'^w	q'^w	
Fricative		s	š	x	χ	h
Labialized fricative				x^w	$χ^w$	
Affricate		c	č			
Ejective affricate		cʼ	čʼ			
Lateral fricative		ɬ				
Lateral affricate		ƛ				
Ejective lateral affricate		ƛʼ				
Lateral approximant		l				
Nasal	m	n				
Glide	w		y			

Conclusion

- Dictionary has provided examples of how diminutive consonant symbolism was used in Umatilla.
- Frequency and perceptual similarity can address problems of non-locality, variety of phonemes involved.
- Working on questions of domain of diminutive shift – why doesn't past-tense participate?
- What does it mean for the language that this process is no longer productive?

For language learners

- How do we teach this?
- No longer productive, but was recently.
- Don’t want to reconstruct a version of the language that’s unfamiliar to current speakers.
- Also don’t want to deny learners ways to be expressive and playful with language.

Ḱʷałanáwašamataš

Slides:

Selected references

Aoki, H. (1995). Symbolism in Nez Perce. In L. Hinton, J. Nichols, & J. J. Ohala (Eds.), Sound Symbolism (pp. 15–22). Cambridge University Press.

Ćwiek, A. et al. (2021). The bouba/kiki effect is robust across cultures and writing systems. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *377*(1841). https://doi.org/10.1098/rstb.2020.0390

Jacobs, M. (1931). *A Sketch of Northern Sahaptin Grammar*. University of Washington Press.

Jansen, J. (2010). *A Grammar of Yakima Ichishkíin/Sahaptin* [Ph.D. dissertation]. University of Oregon.

Nichols, J. (1971). Diminutive Consonant Symbolism in Western North America. Language, 47(4), 826–848.

Rose, S., & Walker, R. (2004). A typology of consonant agreement as correspondence. Language, 80(3), 475–531.

Rude, N. (2014). *Umatilla Dictionary*. University of Washington Press.

Features

	Plain	Diminutive
š ⟹ s	[+coronal] [-anterior] [+distributed] [+continuant]	[+coronal] [+anterior] [-distributed] [+continuant]
n ⟹ l	[+sonorant] [+coronal] [+anterior] [+nasal]	[+sonorant] [+coronal] [+anterior] [+lateral]
q ⟹ k	[-coronal] [+dorsal] [+back][-high]	[-coronal] [+dorsal] [+back][+high]
x̣ ⟹ x	[-coronal] [+dorsal] [+back][-high] [+continuant]	[-coronal] [+dorsal] [+back][+high] [+continuant]

Optimality Theory

- Constraint-based (not rule-based) analysis
- Instead of a rule that says change X to Y in a particular context, a constraint rules out X – *X
- Additional constraints rule out plausible alternatives W and Z. Y emerges as the best option.
- Markedness constraints forbid particular outputs
- Faithfulness constraints forbid changes to the input
- The ranking of these constraints determines the output

OT – Constraints - Markedness

* [LowFrequencyC]$_{DIM}$ = No low frequency consonants are permitted in the domain of a diminutive morpheme. Assign violations per consonant according to its level in the frequency hierarchy.

Frequency levels

7	palatal glide	y
6	bilabials	p, m
5	alveolars	t, l, s, c
4		n, ł, ƛ
3	postalveolars	š, č
2	velars	k, x
1	uvulars	q, x̣
0	glottals, bilabial glide	ʾ, h, w

OT – Constraints - Faithfulness

Ranked above the markedness constraint:

- IDENT(labial) = Corresponding segments must agree for [±labial].
- IDENT(coronal) = Corresponding segments must agree for [±coronal].
- IDENT(dorsal) = Corresponding segments must agree for [±dorsal].

OT – Constraints - Faithfulness

Ranked below the markedness constraint:

- IDENT(place) = Corresponding segments must agree for place.
- IDENT(nasal) = Corresponding segments must agree for [±nasal].
- IDENT(continuant) = Corresponding segments must agree for [±continuant].

OT – Example tableaux

1. /ḳáyḳay/$_{DIM}$	IDENT(coronal)	IDENT(dorsal)	*[LowFrequencyC]$_{DIM}$	IDENT(place)
a. ḳáyḳay			******, *****!*	
☞ b. ǩáyǩay			*****, *****	**,
c. ťáyťay	*!, *	*, *	**, **	**,

2. /wána/$_{DIM}$	IDENT(labial)	*[LowFrequencyC]$_{DIM}$	IDENT(continuant)	IDENT(nasal)	IDENT(place)
a. wána		*******, ***!			
☞ b. wála		*******, **	*	*	
c. wáma	*!	*******, *			*

OT - summary

- Captures frequency as dimension of interest in diminutive consonant shifts
- Allows certain changes in order to raise frequency
- But diminutive word must be similar enough to its base to be recoverable
- Can move consonants forward, but only so much

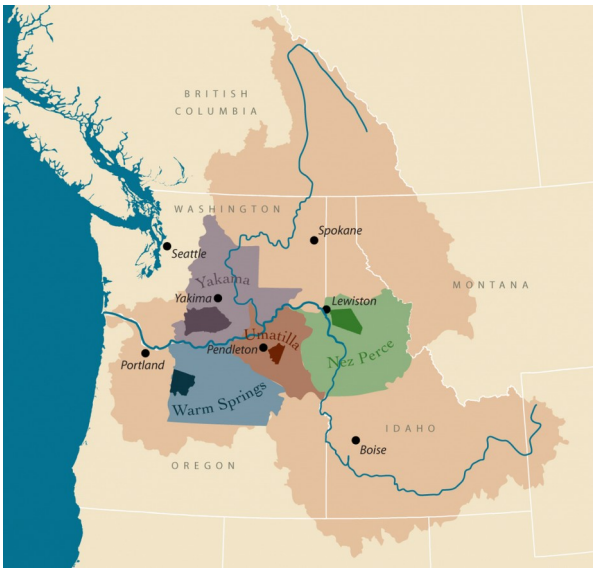
OT – non-participating phonemes

Inputs	*Outputs*	IDENT(lab.)	IDENT(str.)	IDENT(dor.)	IDENT(cor.)	*[LowFreqC]$_{DIM}$	IDENT(pl.)	IDENT(nas.)	IDENT(cont.)
a. /p/$_{DIM}$	☞ p					*			
	y	*!					*		*
b. /m/$_{DIM}$	☞ m					*			
	w					**!*****		*	*
c. /t/$_{DIM}$	☞ t					**			
	p	*!			*	*	*		
d. /h/$_{DIM}$	☞ h					*******			
	x			*!		******	*		
e. /ʔ/$_{DIM}$	☞ ʔ					*******			
	t				*!	**	*		
	q			*!		******	*		

Diminutive sound symbolism in multimorphemic words in Umatilla Ičiškíin/Sahaptin

Gretchen Kern

Umatilla Ičiškíin/Sahapin



https://nauticalcharts.noaa.gov/updates/wp-content/uploads/2022/12/CRITFC_graphic.png

2

Umatilla Ičiškíin or Sahaptin is spoken around the Umatilla Indian Reservation in northeastern Oregon. Dialects of this language are also spoken around the Yakama and Warm Springs reservations in central Washington and Oregon. Nez Perce is a closely related language spoken in Idaho. Both Ičiškíin and Nez Perce make use of diminutive consonant symbolism.

There are only a handful of first-language Umatilla speakers remaining, but the Language Program is actively teaching the language to learners of all ages.

As they learn, students come across some pairs of very similar words...

Vocabulary pairs

miyánaš

child

miyálas

baby

Confederated Umatilla Journal, 5/2025 and 2/2013

3

They learn that the word for a child is miyánaš and a baby is miyálas.

Vocabulary pairs

wána

(Umatilla) river

wála

(McKay) creek

4

Wána is a river, and wála is a creek or stream.

Vocabulary pairs

wíwnu

huckleberry

wiwlúwiwlu

grouse whortleberry

5

Wíwnu is a huckleberry, which grows on a bush that gets to be about waist high, while wiwlúwiwlu is a similar berry that grows closer to ankle height.

Vocabulary pairs

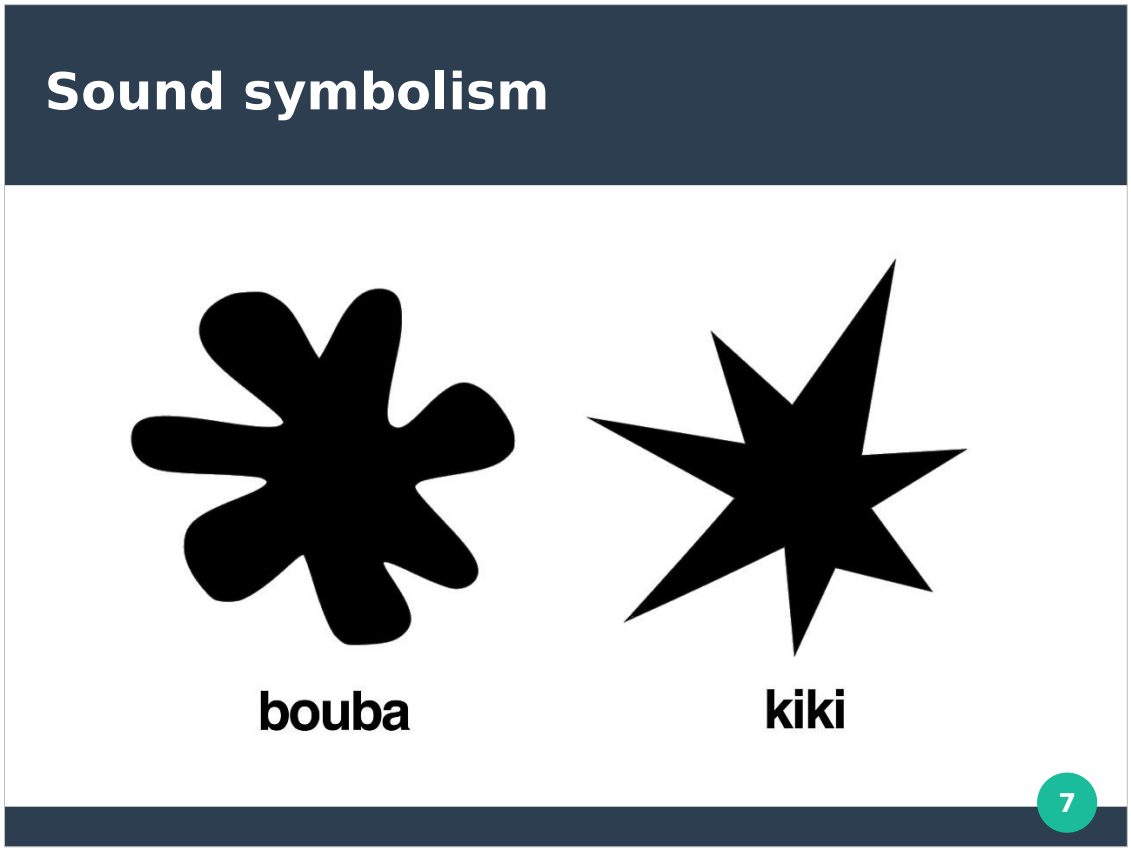
ḳáyḳay

elk calf

ḵáyḵay

young child

ḳáyḳay is an elk calf, while ḵáḵay is a word they might see referring to students at the Pendleton Early Learning Center.



These are examples of sound symbolism, where the sound of a word is connected to its meaning. It's related to linguistic iconicity and ideophones, where the sound of words may mimic or otherwise express certain physical attributes. This has been an area of linguistic research since the 1920's, looking at to what extent particular sounds can be associated with physical properties, challenging the notion of the complete arbitrariness of language. A well-known example of sound symbolism is the Bouba-Kiki Effect, where study participants, who were speakers of unrelated languages, overwhelmingly prefer to label the shape on the left "bouba" and the one on the right "kiki", suggesting a strong link between sound and shape.

In the case of Umatilla, and today's talk, we are looking at diminutive consonant symbolism, where particular consonants are used to represent the diminutive – expressing not only a small size, but also cuteness or feelings of adoration, and sometimes even a negative attitude like derision towards the object in question.

Spread of consonant symbolism

Based on Nichols, J. (1971). Diminutive Consonant Symbolism in Western North America. *Language 47*(4), 826–848.

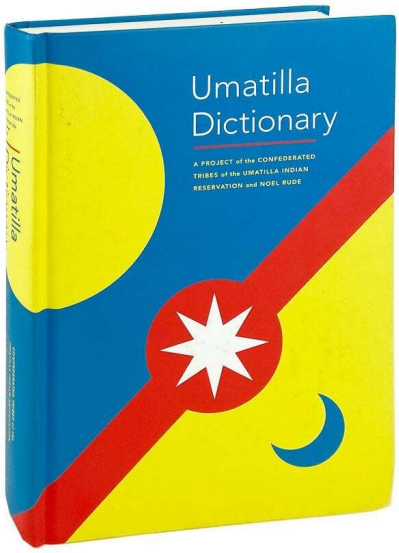
8

Diminutive consonant symbolism has been noted in East Asian and West African languages, and also in many indigenous languages of western North America. In 1971, Johanna Nichols published a survey of many languages exhibiting this phenomenon. This map shows the languages included in that paper, loosely color coded for language family. This shows how wide-spread this phenomenon is, with examples throughout the west. Although each languages has a pattern of diminutive consonant symbolism – a set of consonants alternates between a 'plain' and 'diminutive' form to express diminutiveness – each language has a different set of consonants participating and they undergo different changes.

Nichols mentions that this seems to be an areal feature – likely spread through trade -- and highlights the use of diminutive symbolism in Coyote stories, where speakers may "do a voice" for particular animal characters in a way that makes use of consonant symbolism.

She also mentions that languages vary as to how productive this system is. For some languages, it is fully productive and speakers can create diminutive words on the fly, while in other languages, there may be just a few lexicalized examples. For Umatilla, diminutive symbolism is no longer very productive for most speakers, but many examples are recorded and are frequently used. Nichols' data on Sahaptin comes mainly from a grammar of Northern Sahaptin written by Melville Jacobs in 1931.

Umatilla Dictionary



- Published in 2014
- Written by Noel Rude
- Primarily based on speech of Twáway, Inez Spino Reves
- Available online: http://dictionary.ctuir.org

9

However, much work on the language has been done since then and the 2014 Umatilla Dictionary offers a new source of language data to revisit this phenomenon. It was written by linguist Noel Rude, who worked for decades with speakers on the Umatilla Indian Reservation. Most of the examples in the dictionary come from one speaker, Twáway, Inez Spino Reves, making the examples fairly consistent.

The dictionary includes entries for words as well as bound-roots and other morphemes, many example sentences, and a few narrative texts, all of which show examples of diminutive consonant symbolism in use. Previous linguistic studies of this phenomenon have focused on the phonemes that participate in it and some monomorphemic example words, but don’t give a full picture of how diminutive consonant symbolism is used in the language.

Sahaptin sound symbolism

Plain	Diminutive
š č č̓	s c c̓
n	l
q q̓ qʷ q̓ʷ	k k̓ kʷ k̓ʷ
x̣ x̣ʷ	x xʷ

Augmentative
s ⟹ ł

This slide shows the phonemes that participate in diminutive sound symbolism. This talk will use the Americanist script that has been adopted by the CTUIR as a writing system for Umatilla.

The diminutive shifts can be simplified into four groups. First, all “esh” become “es”, whether on its own, or as part of an affricate. The ejective affricate remains an ejective in the diminutive.

“En” becomes “el.”

Uvular “q” becomes velar “k”. As before, any secondary articulation is retained, whether an ejective or labialization or both.

The same change from uvular to velar occurs in the fricatives, again preserving a secondary labial articulation.

There’s also an augmentative process described by Noel Rude where “es” changes to “eł”, but it’s phonologically a slightly different process with fewer examples, and I won’t be discussing it today. It’s said to come from association with the speech of the bears in Coyote stories – it represents big things because it sounds like a growling bear’s voice.

Consonant inventory of Umatilla

	Bilabial	*Alveolar*	*Post-alveolar*	*Velar*	*Uvular*	*Glottal*
Plosive	p	t		k	q	ʔ
Ejective plosive	ṗ	ṫ		k̓	q̓	
Labialized plosive				kʷ	qʷ	
Ejective labialized plosive				k̓ʷ	q̓ʷ	
Fricative		s	š	x	x̣	h
Labialized fricative				xʷ	x̣ʷ	
Affricate		c	č			
Ejective affricate		ċ	č̓			
Lateral fricative		ɬ				
Lateral affricate		ƛ				
Ejective lateral affricate		ƛ̓				
Lateral approximant		l				
Nasal	m	n				
Glide	w		y			

11

Looking at these sounds as part of the entire consonant inventory of Umatilla, 20 out of 32 total consonants participate in the diminutive shift.

The uvulars all change to their velar equivalent.

The post-alveolar “esh” change to their alveolar equivalent “es” sounds, and “n” changes to “l”.

A handful of sounds don’t participate.

Monomorphemic examples

	English (plain⟹diminutive)	Plain	Diminutive	Consonants
a.	child ⟹ baby	miyánaš	miyálas	n⟹l, š⟹s
b.	river ⟹ stream	wána	wála	n⟹l
c.	sharp ⟹ very sharp	čím	čím	š⟹s
d.	right (direction, noun) ⟹ very correct	niwít	liwít	n⟹l
e.	mashed ⟹ finely mashed (soft, shriveled)	q̓ʷáan	k̓ʷáal	q̓ʷ⟹k̓ʷ, n⟹l
f.	large-scale sucker ⟹ generic small fish	x̣úun	xúlxul	x̣⟹x, n⟹l
g.	elk calf ⟹ small elk calf/child	q̓ayq̓áy	k̓ayk̓áy	q⟹k
h.	canyon ⟹ ravine	x̣iwúš	xiwíis	x̣⟹x, š⟹s

This slide shows a number of (mostly) monomorphemic examples like what are frequently discussed when talking about diminutive consonant symbolism.

Throughout these slides, I've marked the plain series of consonants in orange and the diminutive in blue in hopes of making it easier to follow. These examples show that all eligible consonants within a word will change to their diminutive equivalent – there are no blocking effects in this process.

In terms of meaning, most of them show a change in size with the diminutive as in (a) and (b) which you saw earlier, but a few show a change in precision, such as (c) sharp to very sharp and (d) right to very correct. The example in (e) also shows an example of the negative meaning that can be associated with the diminutive. The word changes from meaning 'mashed' to 'finely mashed' but the dictionary mentions this can also be used for something that has become rotten or gone soft with age.

A couple examples here (f) and (g) also show the diminutive reduplication that can accompany the consonant symbolism, but I won't be talking about this further today. (h) shows some vowel alternations.

Alternating morphemes

English meaning	Plain	Diminutive
cutting	šá-	sá-
causative	šapá-	sapá-
distributive causative	šáp-	sáp-
with the eyes	wán-	wál-
hurriedly	winá-	wilá-
in a line	šu-	su-
motion inside	-naylač	-laylak
lean against	-nanp̓a	-lalp̓a
purpose nominalizer	-aš	-as

English meaning	Plain	Diminutive
patient nominalizer	-š	-s
past participle	-ní	-lí
going along	-náyti	-láyti
down	-anwi	-alwi
ending	-náq̓i	-lák̓i
out	-nayt	-layt
benefactive	-náyk̓ay	-láyk̓ay

13

As in many indigenous languages of the Americas, Ičiškíin has complicated verbal morphology, where a number of prefixes and suffixes can be used to create new verbs. Johanna Jansen in her dissertation on Yakama Ičiškíin highlights a number of these pairs of affixes that alternate between a plain and diminutive form.

I've found these 16 pairs in the Umatilla Dictionary (so far) and I believe this is close to exhaustive of what has been documented there.

Not all of these affixes are used productively in word-building, and for those that are, it seems that the plain form is the one that is used. However, there are many lexicalized examples using both forms.

Non-alternating morphemes

English meaning	Plain	Diminutive
alone	Ø	-šá
into water	Ø	-luu
up in the air	Ø	-lawak
a tool	Ø	-ťáwas
without	-nut	Ø
a bush	-šway	Ø
a field	-aaš	Ø
directional	-ši	Ø
upon	-aša	Ø

In addition to the alternating pairs of affixes, there are also a handful that contain one or more consonants that could participate in diminutive sound symbolism, but are only attested in one form.

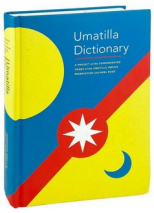
For those that contain a consonant from the diminutive side, this is natural – the diminutive shift only goes one way, and for lexical items where the base is already diminutive, it's not possible to go back to the corresponding plain consonant. (However, -šá 'alone' definitely has a diminutive meaning and triggers a shift to diminutive consonants to a pronoun it attaches to.)

However, these affixes in the plain form here ought to be able to alternate, but they are not attested as doing so. They mostly attach to nouns, with the exception of -aša, which is a verbal suffix. The affixes that alternate mostly attach to verbs, with a few that attach to nouns.

Examples from the dictionary

"Curiously the word xʷíɬsaat 'old man' has diminutive sounds, thus suggesting something like 'little old man', whereas ɬmáma 'old lady' could imply 'big old lady'."

(Noel Rude, 2014:8)



Is xaslú 'star' diminutive even if there is no *x̣ašnú?

In addition to pairs of words that alternate through diminutive symbolism, there are also a large number of words that contain only consonants from either the diminutive or augmentative series, but have no attested pair to contrast with. Noel Rude has a comment in the dictionary saying that "Curiously the word xʷíɬsaat 'old man' has diminutive sounds, thus suggesting something like 'little old man', whereas ɬmáma 'old lady' could imply 'big old lady'."

As an example of this, the word xaslú 'star' contains only diminutive consonants, is plausibly diminutive in meaning – should it be considered a diminutive despite the lack of a plain x̣ašnú to contrast with?

Building words – adding suffixes

	Plain suffix	Diminutive suffix
Plain base	(a) núq̇^{w}aš núq̇^{w}- aš swallow-purpose.nominalizer 'throat'	(b) q̇ímkas q̇ímk- as scrape-purpose.nominalizer.DIM 'shoulder'
Diminutive(?) base	(c) ílukš íluk-š burn-patient.nominalizer 'fire'	(d) ílukas íluk-as burn-purpose.nominalizer.DIM 'firewood'

16

Keeping that in mind, we can look at how the affixes which show diminutive consonant alternations are used in the lexicon – what kinds of bases do they attach to?

These examples show the flexibility in their use. There are a number of different patterns of use of diminutive versus plain affixes on diminutive and plain bases. The fact that a number of consonants don't participate at all in sound symbolism limits the number of examples available, but over the next few slides I'll go over some examples of the different patterns that have been documented in the dictionary.

In the first row, the same purpose nominalizer ("a thing for doing…") attaches to a base containing plain consonants. In (a), the plain form of the affix attaches to a plain base. In the same row in (b), the diminutive form of the same affix attaches to a base with a plain consonant. Both end up meaning a body part.

In the second row, the base íluk- 'burn' contains diminutive consonants, but has no plain contrasting pair, so it's arguably not strongly diminutive. In (c), the plain form of a nominalizer has attached to the base, while in (d) a diminutive form of the purpose nominalizer has attached to the same base.

Does the diminutive meaning only apply to the affix itself? Is a shoulder or firewood diminutive in a way that a throat or fire is not?

So, the consonants in the base are not the deciding factor in adding either a plain or diminutive form of an affix that alternates.

Building words – diminutive bases

(a)	sáali sá- ali cutting.DIM-make.DIM 'to cut with scissors'	cf. anı́- 'to make'
(b)	sapa?ixáwas sapa- ix- áwas CAUS.DIM-clean.DIM-TOOL 'soap'	cf. íix̣- 'to wash'
(c)	táwaxicas táwa- xic- as pierce-throw.down.DIM-purpose.nominalizer.DIM 'stick game sticks'	cf. x̣ič, 'throw down'

However, when the base has clearly undergone a diminutive consonant shift, it appears that the diminutive affixes must be used with it. Although a plain base can take either plain or diminutive affixes.

Building words – pairs of words

Diminutive	Plain
(a) sapacanpáwas sapa- canp- áwas CAUS.DIM-bite.DIM-tool 'bit, bridle'	(b) šapačanpáwas šapa-čanp-áwas CAUS-bite-tool 'bit, bridle'
(c) wiláalak^{w} wilá- alak^{w} hurriedly.DIM-leave.DIM 'to leave'	(d) wináanak^{w} winá- anak^{w} hurriedly-leave 'to leave through death'

There are also a handful of multimorphemic words where the dictionary lists a form that has undergone diminutive consonant shift and one that hasn't.

In the example in the top row, both (a) and (b) have the same meaning given of a 'bit or bridle'

For the pair in (c) and (d), the diminutive version of the word means 'to leave', while the plain version is associated with 'leaving by death' – with a longer duration of time away.

Building words - mixed

Diminutive + diminutive + plain

(a) sapasunaytí
sapa- su- naytí
CAUS.DIM-in.a.line.DIM-going.along
'wheelbarrow'

Diminutive + plain + diminutive

(b) sapáx̣ʷluus
sapá- x̣ʷluu- s
CAUS.DIM-drink.lying.prone-patient.nominalizer.DIM
'fishing platform'

Diminutive (or plain) + diminutive + diminutive

(c) sapák̓ɨlks (also attested as šapák̓ɨlks)
sapá- k̓ɨlk- s
CAUS.DIM-block.the.way.DIM-patient.nominalizer.DIM
'hider' (part of men's regalia)

19

Of course, Sahaptin morphology gets complex, and how to analyze this depends on whether you see these as a base plus adverbial affixes as Rude describes them in the dictionary or thinking of verbs as bipartite which might assign more equal status to the parts. For example, in (a) all the morphemes involved here are listed as alternating affixes with no clear, independent base. (náyti is also a bound root)

So in these examples consisting of three morphemes, we have a single plain morpheme appearing in all three positions.

And, although for the most part diminutive affixes are required when the base is diminutive, the (alternative) example in (c) might be a counter example – with a plain causative suffix on a diminutive base.

Inflectional suffixes

(a)	alyáwašaaš útpas alyáwa-ša- aš útpas bet- CONT-1SG blanket 'I am putting the blanket out for bet'	(Rude, 2014:57)
(b)	isapálalpasaaš i- sapálalpa- sa- aš 3SG.SUBJ-take.picture- CONT-1SG 'he is taking my picture'	(Rude, 2014:265)
(c)	áwisxsaas á- wisx-sa- as 3OBV-sew- CONT-1SG 'I'm sewing it'	(Rude, 2014:421)

20

Beyond the lexical entries in the dictionary, there are example sentences given as part of the definitions that also contain examples of diminutive sound symbolism. Some of these show a diminutive consonant shift in some of the inflectional suffixes.

The example in (a) shows a diminutive verb, and the inflectional suffixes are what we would expect – the continuous aspect marker is -sha and the first person marker is -ash.

In (b), the continuous aspect has changed from -sha to -sa, but the first person marker is still the usual -ash.

In (c), both the continuous and first person have shifted from -shaash to -saas.

Note also that there are no examples showing the opposite of the pattern in (b) where the continuous aspect is in its plain form, but a following first person enclitic is diminutive.

Inflectional suffixes - narrative

Naamí Sínwit ‘Our Language’ (Rude, 2014: 46-7)

	Plain (4 examples total)		**Diminutive** (10 examples total)
(a)	ásamx̣našanaataš á-samx̣na-ša-na-ataš 3OBV-talk.to-CONT-PST-1PL.INCL ‘We were talking to them’	(e)	pasínwisata pa-sínwi-sa-ta 3PL.SUBJ-speak-CONT-FUT ‘They will be speaking’
(b)	áp̓x̣nayiša á-p̓x̣nayi-ša 3OBV-remember-CONT ‘We remember’	(f)	iwáɬwisa i-wáɬwi-sa 3SG.SUBJ-lead-CONT ‘(language) is leading’
(c)	qqaanáyša qqaanáy-ša work-CONT ‘We are working’	(g)	paskúulisana pa-skúuli-sa-na 3PL.SUBJ-go.to.school-CONT-PST ‘They were going to school’
(d)	átimayišana á-timayi-ša-na 3OBV-write-CONT-PST ‘We were writing them’	(h)	isápsik̓ʷasa (x4) i-sápsik̓ʷa-sa 3SG.SUBJ-teach-CONT ‘He is teaching’

21

We aren’t limited to out of context example sentences to see this – one of the narratives from the front of the dictionary shows the speaker shifting from using the plain to diminutive form of the continuous aspect marker throughout a narrative. Out of 14 verbs with a continuous suffix,

She has 4 examples of using the plain form, and 10 examples using the diminutive form. All of the diminutive examples show only diminutive (or non-plain) consonants in the verbs they attach to, but they are not explicitly shifted to a diminutive form – these is the regular forms of the verb. Also note that the example in (f) shows no consonants that participate in consonant symbolism – this is also the case for (d) of the plain examples.

In most of the examples with the diminutive form of the continuous marker, she is talking about ‘children’ as either the subject or direct object of the verb. The use of the diminutive here may be to express an attitude of caring about the children.

One other thing to note here is the example in (g) – although the continuous aspect marker is shifted from plain -sha to diminutive -sa, the past tense marker -na has not shifted to a diminutive -la, although it seems like this should be possible.

The dictionary has numerous examples of -sha shifting to -sa, but I have found none of the past tense -na (or accusative -na) appearing as -la.

Beyond the word?

(a)	káatlam wiɨxá wɨxalxalí long.DIM leg spider 'daddy long-legs'	cf. káatnam 'long', wiɨxaní 'legged'

(b)	Ku pasɨ́nwisata páyš tanánki, Ku pa- sɨ́nwi-sa- ta páyš tanán- ki, and 3PL.SUBJ-speak-CONT-FUT maybe Indian-INSTR 'And maybe they will be speaking in Indian,'

Seeing diminutive consonant symbolism used across an entire phonological word invites the question of whether it can spread beyond a word boundary.

So far, I have seen no examples of this. Here in (a), the term for a daddy long-legs spider consists of three words, and the first is a diminutive version of 'long'. Leg is in its plain form, and the regular word for a spider is diminutive from 'legged'.

In (b), looking at a longer string from the narrative before, we can see that the diminutive 'they will be speaking' is followed by a plain version of 'maybe' and 'in Indian'.

Summary of data

- Only certain consonants participate
- Some affixes alternate
  - May attach to plain or diminutive stems
  - Some preference for entire word to change to diminutive
- Entire word (including inflectional suffixes) may shift to diminutive
- No evidence for shift beyond a word

To review the data, we have seen that only certain consonants participate in diminutive symbolism.

Some affixes show alternations and may attach to either plain or diminutive stems, but there is some preference for whole words to be diminutive if a base is diminutive, including inflectional suffixes.

There's no evidence of diminutive shifts extending beyond the word.

Phonological analysis

- Difficult for two reasons:
  - Distance
    - non-local process
    - resembles consonant harmony, but…
  - Consonants & changes involved
    - no shared features among participating consonants
    - no uniform changes in features in the shift to diminutive

Moving on to a brief phonological analysis of this phenomenon, it is something that hasn't had a lot of attention since Nichols 1971 paper and this is in part because diminutive sound symbolism is difficult for a couple of reasons. The first is that it's a non-local process, meaning that the consonants involved are not adjacent to each other – this makes is hard to capture their relationship. In this way, the process resembles consonant harmony, but while consonant harmony involves all consonants sharing a particular phonological feature, the consonants involved in diminutive symbolism are a strange mix, and the changes they undergo are also varied to the degree that the process has been said to be "not phonological". (Rose & Walker, 2004)

Perception & phonetics

- Nichols (1971) – identifies "a higher tonality" or frequency of sounds as the phonetic basis shift for Sahaptin and a handful of other languages.
- Sounds produced towards the front of the mouth have higher frequency due to a smaller resonant chamber.
- Can raise frequency a bit, but not so much that original word is non-recoverable by listeners.
- Non-participating consonants have no perceptually-similar, higher-frequency target.

25

Turning instead to a more perceptual account, Nichols identifies a "higher tonality" or frequency as being the phonetic basis of a diminutive shift in several languages, including Sahaptin.

In Sahaptin, the diminutive shift generally involves moving a consonant to one produced slightly more towards the front of the mouth – this raises the frequency by creating a smaller resonant chamber for the sound waves.

A description of the process might be that a speaker can raise the frequency of consonants a bit, but not so much that the original word is non-recoverable by listeners.

Consonant inventory of Umatilla

	Bilabial	*Alveolar*	*Post-alveolar*	*Velar*	*Uvular*	*Glottal*
Plosive	p	t		k	q	ʔ
Ejective plosive	p̓	t̓		k̓	q̓	
Labialized plosive				kʷ	qʷ	
Ejective labialized plosive				k̓ʷ	q̓ʷ	
Fricative		s	š	x	x̣	h
Labialized fricative				xʷ	x̣ʷ	
Affricate		c	č			
Ejective affricate		c̓	č̓			
Lateral fricative		ɬ				
Lateral affricate		ƛ				
Ejective lateral affricate		ƛ̓				
Lateral approximant		l				
Nasal	m	n				
Glide	w		y			

Consonants that don’t participate in diminutive symbolism are ones that have no perceptually-similar, higher-frequency target to move to. For example, the labial sounds are already produced at the lips, so they can’t move any farther forward. Glottals are produced in the back of the throat, so moving them up to uvulars would be a significant change. So an analysis based on raising the frequency of consonants for the diminutive while maintaining perceptual similarity should explain the process as phonological.

Conclusion

- Dictionary has provided examples of how diminutive consonant symbolism was used in Umatilla.
- Frequency and perceptual similarity can address problems of non-locality, variety of phonemes involved.
- Working on questions of domain of diminutive shift – why doesn't past-tense participate?
- What does it mean for the language that this process is no longer productive?

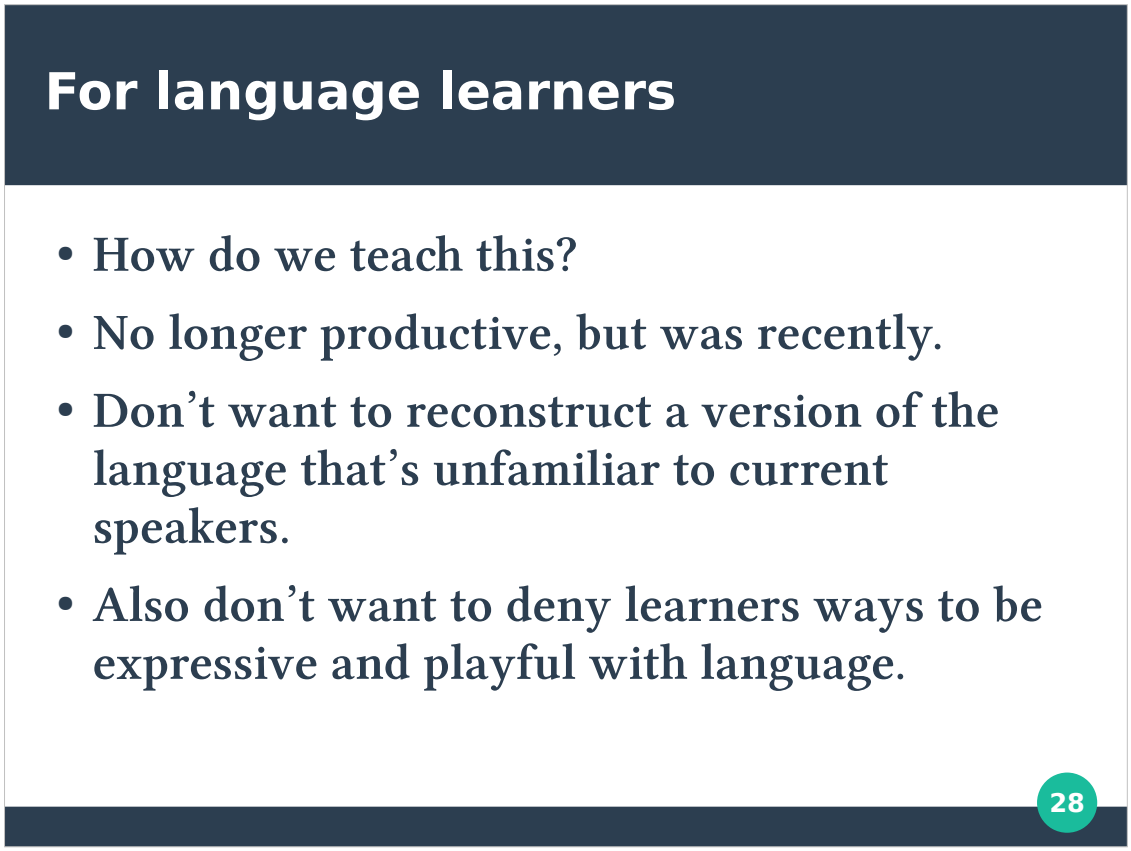
27

In conclusion, the Umatilla Dictionary has provided examples of how diminutive consonant symbolism is used in the language, to a much fuller degree than was recorded by Jacobs in 1931 – this lets us better understand this phenomenon. Other languages in Nichols' study have also probably been better documented since 1971 and might be worth a re-visit.

An analysis referencing frequency and perceptual similarity can address the difficulties of non-locality and the consonants that participate, or don't, in the diminutive shift.

Still working on questions of the domain of language shift – how to describe affix behavior, and why doesn't past tense participate?

Also thinking about what the loss of productivity of this phenomenon means. As the community of first language speakers shrinks, there are numerous aspects of the grammar that are changing rapidly from what was documented in the dictionary. If this is not available, how else are speakers expressing themselves in the language?



And finally, to return to the question of language learners who encounter these similar pairs of words that started the presentation – how do we present diminutive consonant symbolism to them?

As mentioned, there have been a large number of grammatical changes in the language in the past generation or two. As we create learning materials, we don't want to reconstruct a form of the language that is unfamiliar to today's speakers, but we also don't want to deprive learners of ways to be expressive and playful with the language.

Ḱʷałanáwašamataš

Slides:

Selected references

Aoki, H. (1995). Symbolism in Nez Perce. In L. Hinton, J. Nichols, & J. J. Ohala (Eds.), Sound Symbolism (pp. 15–22). Cambridge University Press.

Ćwiek, A. et al. (2021). The bouba/kiki effect is robust across cultures and writing systems. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *377*(1841). https://doi.org/10.1098/rstb.2020.0390

Jacobs, M. (1931). *A Sketch of Northern Sahaptin Grammar*. University of Washington Press.

Jansen, J. (2010). *A Grammar of Yakima Ichishkíin/Sahaptin* [Ph.D. dissertation]. University of Oregon.

Nichols, J. (1971). Diminutive Consonant Symbolism in Western North America. Language, 47(4), 826–848.

Rose, S., & Walker, R. (2004). A typology of consonant agreement as correspondence. Language, 80(3), 475–531.

Rude, N. (2014). *Umatilla Dictionary*. University of Washington Press.

Features

	Plain	Diminutive
š ⟹ s	[+coronal] [-anterior] [+distributed] [+continuant]	[+coronal] [+anterior] [-distributed] [+continuant]
n ⟹ l	[+sonorant] [+coronal] [+anterior] [+nasal]	[+sonorant] [+coronal] [+anterior] [+lateral]
q ⟹ k	[-coronal] [+dorsal] [+back][-high]	[-coronal] [+dorsal] [+back][+high]
x̣ ⟹ x	[-coronal] [+dorsal] [+back][-high] [+continuant]	[-coronal] [+dorsal] [+back][+high] [+continuant]

Optimality Theory

- Constraint-based (not rule-based) analysis
- Instead of a rule that says change X to Y in a particular context, a constraint rules out X – *X
- Additional constraints rule out plausible alternatives W and Z. Y emerges as the best option.
- Markedness constraints forbid particular outputs
- Faithfulness constraints forbid changes to the input
- The ranking of these constraints determines the output

OT – Constraints - Markedness

*$[\text{LowFrequencyC}]_{\text{DIM}}$ = No low frequency consonants are permitted in the domain of a diminutive morpheme. Assign violations per consonant according to its level in the frequency hierarchy.

Frequency levels

7	palatal glide	y
6	bilabials	p, m
5	alveolars	t, l, s, c
4		n, ł, ƛ
3	postalveolars	š, č
2	velars	k, x
1	uvulars	q, x̣
0	glottals, bilabial glide	ʾ, h, w

OT – Constraints - Faithfulness

Ranked above the markedness constraint:

- IDENT(labial) = Corresponding segments must agree for [±labial].
- IDENT(coronal) = Corresponding segments must agree for [±coronal].
- IDENT(dorsal) = Corresponding segments must agree for [±dorsal].

OT – Constraints - Faithfulness

Ranked below the markedness constraint:

- IDENT(place) = Corresponding segments must agree for place.
- IDENT(nasal) = Corresponding segments must agree for [±nasal].
- IDENT(continuant) = Corresponding segments must agree for [±continuant].

OT – Example tableaux

1. /ɖáyɖay/$_{DIM}$	IDENT(coronal)	IDENT(dorsal)	*[LowFrequencyC]$_{DIM}$	IDENT(place)
a. ɖáyɖay			******, *****!*	
☞ b. ƙ̍áyƙ̍ay			*****, *****	**,
c. ƭáyƭay	*!, *	*, *	**, **	**,

2. /wána/$_{DIM}$	IDENT(labial)	*[LowFrequencyC]$_{DIM}$	IDENT(continuant)	IDENT(nasal)	IDENT(place)
a. wána		*******, ***!			
☞ b. wála		*******, **	*	*	
c. wáma	*!	*******, *			*

OT - summary

- Captures frequency as dimension of interest in diminutive consonant shifts
- Allows certain changes in order to raise frequency
- But diminutive word must be similar enough to its base to be recoverable
- Can move consonants forward, but only so much

OT – non-participating phonemes

Inputs	*Outputs*	IDENT(lab.)	IDENT(str.)	IDENT(dor.)	IDENT(cor.)	*[LowFreqC]$_{DIM}$	IDENT(pl.)	IDENT(nas.)	IDENT(cont.)
a. /p/$_{DIM}$	☞ p					*			
	y	*!					*		*
b. /m/$_{DIM}$	☞ m					*			
	w					**!*****		*	*
c. /t/$_{DIM}$	☞ t					**			
	p	*!			*	*	*		
d. /h/$_{DIM}$	☞ h					*******			
	x̲			*!		******	*		
e. /ʔ/$_{DIM}$	☞ ʔ					*******			
	t				*!	**	*		
	q			*!		******	*		