

Proto-Sahaptian vocalism

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This paper challenges the analysis in Crook (1996). Rather than positing underlying long vowels that get shortened when not stressed, the opposite solution is suggested: regular vowels are lengthened when stressed. This analysis is justified by the fact that Nez Perce also has underlyingly long vowels which remain long even when not stressed. Also it is suggested that those vowels which do not lengthen under stress are epenthetic, on the order of barred *i* in Sahaptin as analyzed by Hargus and Beavert (2002).

1 Sahaptian vowel contrasts

Nez Perce and Sahaptin are two closely related but mutually unintelligible languages of the Southern Plateau of the Pacific Northwest of the United States. These two languages uniquely constitute the Sahaptian language family. Documentation for Nez Perce shows little dialect variation, but Sahaptin survives in numerous divergent dialects which Rigsby (1965*b*) groups into three dialect clusters: Northwest, Northeast, and Columbia River Sahaptin. The Nez Perce and Sahaptin vowel systems and the proposed vowels of the parent language are given in Table 1. It is to be noted that the Palouse dialect of Sahaptin probably had the same vowel inventory as proposed for Proto-Sahaptian. Also, it is possible that Proto-Sahaptian lacked the vowel **o*.¹

¹ I have typed the data in *Lucida Sans Unicode* because it's available in Microsoft Windows and because it has a barred *ı*. However, there is no barred *ı* with acute accent, and so I have used *ı́* instead. Nez Perce data is readily available in dictionary form in Aoki (1994), and can be studied in the published texts of Phinney (1934), Aoki (1990), and Aoki and Walker (1989). Published texts for Sahaptin include Jacobs (1929, 1934, 1937). Abbreviations in this paper are as follows: CR Columbia River Sahaptin; K Klikitat Sahaptin; N Northwest and Northeast Sahaptin; NE Northeast Sahaptin; NP Nez Perce; NW Northwest Sahaptin; PS Proto-Sahaptian; S Sahaptin; WS Warm Springs; Y Yakama Sahaptin.

Table 1. Sahaptian vowels

	NEZ PERCE			SAHAPTIN			PROTO-SAHAPTIAN		
	<i>Front</i>	<i>Central</i>	<i>Back</i>	<i>Front</i>	<i>Central</i>	<i>Back</i>	<i>Front</i>	<i>Central</i>	<i>Back</i>
<i>High</i>	i		u	i	ɨ	u	i	ɨ	u
<i>Mid</i>			o						o
<i>Low</i>	æ		a		a		æ		a

The i ~ u contrast, shared by both Nez Perce and Sahaptin, is illustrated in (1) and (2):

- (1) PS *ki 'this'; NP /ki/;² S čī
 (2) PS *ku 'go, do'; NP /ku/; S ku

The æ ~ a contrast (orthographically e ~ a in the rest of this paper) is not found in Sahaptin (except for the Palouse dialect which borders Nez Perce) but exists in Nez Perce, as contrasted in (3) and (4).

- (3) NP /peyu/ 'hoof'
 (4) NP /payo/ 'bright, loud, strong'

That the *u ~ *o contrast, found only in Nez Perce, was there already in Proto-Sahaptin is suggested by the following (assuming these words to have been phonologically distinct in Proto-Sahaptian and neither a later borrowing into Sahaptin).

- (5) puhúš 'inner meaty side of hide'; NP /puhus/; NE puʔúš; S púuš
 (6) pohóš 'tree sp.'; NP /pohos/ 'mountain mahogany hardwood';
Cercocarpus ledifolius; NE puʔúš and CR púuš 'juniper, *Juniperus occidentalis*'

2 The æ ~ a contrast and Sahaptin palatalization

Though the e ~ a contrast is lost in Sahaptin, Rigsby (1965a) shows it to have been a part of the parent language. Sahaptin has palatalized velars before PS *e (7, 8) but not before PS *a (9, 10).

- (7) S čánp 'bite'; cf. NP /keʔnp/ 'bite'
 (8) NE áč'ak; CR áč'ay 'magpie'; cf. NP /ʔek'ek/
 (9) S yáka 'bear'; NP /yákaʔ/
 (10) S skáwn 'fear'; cf. NP /ckáwn/ 'fear'

² Nez Perce phonology yields so much allomorphy that generally I will be citing underlying forms between slashes.

Sahaptin vowel harmony (see Aoki 1962) operated with the two sets of vowels shown in Table 2. If one morpheme in a word has a strong vowel, all the vowels in that word must be strong. Thus Sahaptin *kánaq'i* 'finish eating', though it has no exact cognate in Nez Perce, NP /*naq'i*/ 'finish' has strong vowels, and therefore the Sahaptin word would be a reflex of an earlier **kánaq'i* (with **ká-* instead of **ké-* meaning that the **k* would not palatalize). Sahaptin *šč'ápa* 'rose hip' (with *č'*) suggests PS **šk'épe*, whereas Sahaptin *šk'apášway* 'rose bush' (with *k'*) suggests an earlier **šk'apášway* (< /*šč'épešway*/) and, indeed, the Nez Perce cognate of the element meaning 'bush' (NP /-*s'way*/) is marked for strong vowels and thus would condition *a* in place of *e* throughout the word (see Aoki 1994:626).

Table 2. Proto-Sahaptin Vowel Harmony

	Weak Vowels			Strong Vowels		
	Front	Central	Back	Front	Central	Back
High	i	ɨ	u	i	ɨ	
Mid						o
Low	æ					a

Some Sahaptin reflexes of PS **ke*, such as in S *káʔuyit* 'first feasting', are not palatalized as expected: compare NP *kéʔuyit* 'first feasting'. This may be due to later borrowing from Nez Perce, or because Sahaptin inherits a form with diminutive sound symbolism. Note that the strong vowels *a* and *o* are associated with diminutive sound symbolism in Nez Perce (see Table 3 for a sampling of sound symbolic contrasts). And in Sahaptin we find that words derived by diminutive sound symbolism do not experience palatalization before *a*. For example, Sahaptin *wáalikalwi* (from earlier **wayálikalwi*) 'sled downhill', derived by diminutive sound symbolism from Sahaptin *wáaničanwi* (< **weyénikenwi*) 'run downhill', has had palatalization blocked by the conversion of a plain/weak **e* to a diminutive/strong *a*.³ Ex. (11) provides another illustration of derivation via sound symbolism – this time I would say with **e* from earlier **a* providing an "augmentative" sense. But here there is no tell-tail evidence of palatalization and thus the two words, if distinguished in Proto-Sahaptian, are no longer distinct in Sahaptin.

- (11) NP /*háy'a*/ 'scratch an itch'; NP /*héy'e*/ 'spawn' (of fish); S *áya* 'scratch an itch; spawn'

³ There are a few instances where *k* occurs before *a* in Sahaptin and the Nez Perce cognate not only has /*a*/ but also *q*: e.g., S *káa* 'maternal grandmother' (cf. NP /*qáca*/); S *lákas* 'mouse' (cf. NP /*laqac*/). Nez Perce *q* is diminutive but in Sahaptin *k* carries that status.

Table 3. A Partial list of Sound Symbolic Contrasts in Sahaptian

<i>Nez Perce</i>		<i>Sahaptin</i>	
<i>Plain</i>	<i>Diminutive</i>	<i>Plain</i>	<i>Diminutive</i>
n	l	n	l
s	c	š	s
e	a	č	c
u	o		

Note that *i and *ɨ occur in both sets in Table 3. That is, though most of the time *i behaves as though it were in the weak set (e.g., /ʔni/ 'give' in ex. (12), sometimes it behaves as though in the strong set (e.g., /mc'i/ 'hear' in ex. (13). The same is true for *ɨ, though we will wait for examples until the discussion of barred *ɨ below. When a morpheme marked for strong vowels has no /a/ or /o/, it will be underlined. See Aoki (1970).

- (12) NP péeʔniye /pé-ʔni-e/ 'he/she gave [it] to him/her'
 (13) NP páamc'iya /pé-mc'i-e/ 'he/she gave [it] to him/her'

In conclusion I will suggest that because *i and *ɨ reconstruct for both the weak and strong sets in Proto-Sahaptian vowel harmony, we should think not just of vowels but of whole morphemes as being marked for strong vowel harmony. And because NP /a/ and /o/ from the strong set correlate with diminutive sound symbolism, it is proposed that Sahaptian vowel harmony and sound symbolism are related in their origin, as suggested in Rude (1996), even though not all examples of morphemes marked for strong vowel harmony are necessarily marked for diminutive sound symbolism.

Because there is no comparable test in Sahaptin for a PS:*o - *u contrast (such as palatalization), it is always possible that /o/ was a separate development in Nez Perce.

3 Sources for long vowels

Both Nez Perce and Sahaptin contrast short and long vowels. The long vowels have four sources. One source is a process of "ablaut", fairly productive in Sahaptin, which converts zero or barred ɨ into a long vowel. In Sahaptin this long vowel may be aa, ii, or uu:

- (14) xáalp 'open' (adj.); cf. xli'p 'open' (vi.)
 (15) ʔiik^wi 'all day'; cf. ʔk^w'i 'day'
 (16) múut 'a few'; cf. mi'ɨ 'how many?'

There is at least the following from Nez Perce:

- (17) talíx /tlíiq/ 'still, not moving'; cf. /tlqn/ 'stop'
 (18) tíipip 'foam' (noun); cf. /tpípi/ 'foam, be sudsy' (Aoki 1994:753)

There is another derivational process which lengthens the second vowel in the sequence *V?V or *VhV:

- (19) WS laʔáam ‘faded, faint’; cf. NP /laʔámn/ ‘fade away’
 (20) NP tehéem ‘dark’; cf. NP /tehémn/ ‘be dark’ (from smoke, fog, storm)

The loss of an intervocalic consonant is another source of long vowels. The sequence *ewe (also *awa), for example, is realized variously in the dialects as a long vowel:

- (21) NP kúus; S čúuš; Y číiš; cf. K čáwaš; PS *kéweš ‘water’
 (22) NP miyóoxat; CR & NE miyúux; NW miyáwaḡ; PS *miyáwaḡ ‘chief’

The sequence *eye (also *aya) is variously reduced to a long vowel:

- (23) NP weecéese /weyece⁴-s-e/ ‘I am dancing’; S wáašašaš ‘I am dancing’; cf. NP weyéeces /weyece-s/ ‘I have just danced’
 (24) S ččáa ‘service berry’; cf. NP kikéeye; PS *kikéye
 (25) CR & NE wapáata ‘help’; NW wapíita; cf. NP /wapáyata/; PS *wapáyata

The sequence *ene regularly reduces to ii in Yakima:

- (26) Y tíin ‘person’; cf. CR tanán; PS *tenén
 (27) Y twíin ‘accompany, follow’; cf. CR & NE twána; PS *twénen

PS *twénen ‘accompany, follow’ occurs in Nez Perce when compounded with other verbs in the form shown in (28).

- (28) NP /-tween/ ‘accompanying’; NE -twaa; Y -twiin; CR -twana; PS *-twenen

Unstressed *ana/*ala is variously reduced to aa in NW and CR Sahaptin. That the vowels in (29, 30) were diminutive (e.g., *a) is suggested by the diminutive consonants l, s, and x^w (the front x, as opposed to the uvular χ, is nearly always diminutive).

- (29) NW & CR x^wʔ ‘saat ‘old man’; cf. NE x^wʔ ‘sanat; also NP qósalat /q^wʔ salat/ ‘male mountain goat’

⁴ If such processes are not synchronic then Nez Perce abounds with suppletion. Here Aoki (1994) cites two separate entries: we·cé· ‘to dance’ on page 844 and weyé·ce ‘to dance’ on page 870.

- (30) NW *kʷaalí* ‘mythical being with supernatural powers’; cf. CR & NE *kʷalalí*

The sequences **V7V* and **VhV* reduce to a long vowel in certain environments:

- (31) CR *kúuš* ‘thusly’; cf. NE *kuʔúš*; NP *kuʔús*; PS **kuʔúš*
 (32) CR *púuš* ‘inner meaty surface of hide’; cf. NE *puʔúš*; NP */puhus/*; PS **puhúš*

The fourth source of long vowels applies only to Nez Perce. It is a process that lengthens vowels under stress (stress is assigned to the penultimate in Nez Perce words that have no morpheme inherent stress):

- (33) NP *wéptes* /*wep̣tes*/ ‘golden eagle’; *weptéesne* /*wep̣tes-ne*/ (accusative)
 (34) NP *píilus* /*pilus*/ ‘gooseberry’; *pilúusne* /*pilus-ne*/ (accusative)

Vowels do not lengthen in the sequence */V7V/* or */VhV/*:

- (35) NP *haʔáca* /*hi-ʔác-e*/ ‘he/she entered’; NP *ʔáaca* /*ʔác-e*/ ‘I entered’
 (36) NP *tóhon* /*tohon*/ ‘leggings’; *tohónna* /*tohon-ne*/ (accusative)

There are a few examples of long vowels in the environment */V7V/* and */VhV/*. These, such as in NP *káaʔawn* ‘dawn’ and NP *tehéem* ‘dark’, are assumed to be long underlyingly.

Some long vowels may be due to borrowing. Sahaptin *háašn* ‘breathe’ could be borrowed from NP *héésin* /*hésin*/ ‘breathe’, as suggested by the fact that the *h* is preserved. Sahaptin regularly merged PS **h* and **ʔ*; e.g., compare S *aní* (phonetically [ʔaní]⁵) and NP */hani/*, both ‘make’. What I have described as a vowel lengthening process, Crook (1996) analyzes as vowel shortening. Perhaps this makes sense pedagogically, though I would suggest that the presence of vowels that remain long even when not stressed argues against this analysis in a synchronic phonology. There are, as we have seen, many instances where one must posit long vowels as underlying, as, for example, those from derivational processes (ablaut, etc.), or words such as NP *kúus* ‘water’ for which we can reconstruct PS **kéweš* only with reference to Sahaptin. Also I would suggest that the Nez Perce syllable timing was not amenable to a vowel shortening process.

⁵ By orthographic convention word initial glottal stops are written in Nez Perce but not in Sahaptin.

4 Barred $\ddot{\text{t}}$ as epenthetic vowel

Sharon Hargus (2002*a* and *b*) argues that barred $\ddot{\text{t}}$ is a predictable epenthetic vowel in Yakima Sahaptin. I find this to be the best explanation for those vowels in Nez Perce which delete in certain environments and do not lengthen under stress. This vowel, which is realized in Nez Perce as [i], seems to be entirely predictable. With some caveats made for consonant type and ideolect, the environment is C_C(C). Thus [i] breaks up word initial clusters:

- (37) NP *píley* /pney/ 'pestle'; cf. S *pnáy*
(38) NP *tíms* /tms/ 'chokecherry'; cf. S *tmí'š*

It takes penultimate stress in verbs without morpheme inherent stress:

- (39) NP *hipíse* /hp-s-e/ 'I am eating'
(40) NP *hekíce* /hekn-s-e/ 'I see'

It carries penultimate stress in nouns with stem final CC clusters:

- (41) NP *píips* /pips/ 'bone'; *pipísne* /pips-ne/ (accusative)
(42) NP *tewlíikt* /tewlikt/ 'tree'; *tewlíktpe* /tewlikt-pe/ 'in the tree'

And it carries penultimate stress word internally in CC clusters if at least one member is a resonant or ejective:

- (43) NP *ken'íwit* /ken'wit/ 'weaving'; *ken'wíise* /ken'wi-s-e/ 'I am weaving'; cf. S *čanúwit* 'weaving'; *čanúwíšaaš* 'I am weaving'
(44) NP *kimíle* /kimle/ 'tamarack'; *kimléene* /kimle-ne/ (accusative)

Words do not terminate in a syllabic nasal:

- (45) NP *héekin* /hekn-s/ 'I have seen'; cf. *héexne* /hekn-e/ 'I saw'

The quality of the epenthetic vowel varies. It is generally [a] in words marked for strong vowels:

- (46) NP *páyos* /pyos/ 'snake'; *payóosna* /pyos-ne/ (accusative); cf. S *pyúš*
(47) NP *páaps* /paps/ 'douglas fir'; *papásna* /paps-ne/ (accusative); cf. S *pápš*

In the following there are no underlying strong vowels /a/ or /o/, rather the whole morpheme must be seen as marked for strong vowels, as is evident from the epenthetic [a].

- (48) NP ʔácip /ʔcip/ ‘woman’s younger sister’; cf. S ʔsíp
 (49) NP sáq’is /sq’is/ ‘shade’; cf. S šq’íš

Next to a uvular consonant the epenthetic vowel is [e] ([a] if the word is marked for strong vowels):

- (50) NP qém’es /qm’es/ ‘camas’; cf. S χμάαš
 (51) NP pílx /plq/ ‘nape of neck’; piléχne /plq-ne/ (accusative); cf. S pní’χ
 (52) NP qápqaq /qppq/ ‘cottonwood’; cf. S χρχί’p

Nez Perce, at least upriver Nez Perce, has no surface labiovelars. But next to what was historically a labiovelar or labiovelar (or before /ku/, /qu/, /k’u/, or /q’u/) the vowel is [u]. Note the contrastive vowel patterns when a vowel follows the labiovelar (57):⁶

- (53) NP núkt /nk^wt/ ‘meat’; nukútpe /nk^wt-pe/ ‘in the meat’; cf. S nk^wí’ t
 (54) NP súqu /squ/ ‘river bank’; cf. Sahaptin šχú
 (55) NP tuk’úkin /tk^wkn-t/ ‘being straight’; cf. S tk^wí’ kn ‘be straight’
 (56) NP túxit /t’x^wi-t/ ‘rolling hemp’; cf. S tax^wí’ s ‘dogbane hemp’⁷
 (57) NP tukéeyise /tk^wéyi-s-e/ ‘mine is lying prone’; hitkúüyise /hi-tk^wéyi-s-e/ ‘it is lying prone’; cf. S tk^wáyi ‘lie prone’

If the word is marked for strong vowels then the epenthetic vowel is [o]:

- (58) NP tók’o /tk’o/ ‘tule’; cf. S tk’ú
 (59) NP qócqoc /q^wcq^wc/ ‘meadowlark’; cf. S χ^wí’ tχ^wí
 (60) NP q’ocq’óc /q^w’cq^w’ c/ ‘naked’
 (61) NP cok’áayna /ck^wáyn-e/ ‘I wasn’t hungry’; hick’óoyna /hi-ck^wáyn-e/ ‘he wasn’t hungry’

Note that a final nasal is always syllabified in Nez Perce with [i], as in (45) and (55) above, never [a] or [u]. Compare also (62) and (63).

- (62) NP ʔiyáaqin /ʔyáqn-s/ ‘I have found [it]’; ʔiyáaxna /ʔyáqn-e/ ‘I found [it]’
 (63) NP tin’úkin /tn’k^wn-t/ ‘dying, death’; tin’kice /tn’k^wn-s-e/ ‘I am dying’

⁶ Aoki (1970, 1994) analyzed the velar and uvular consonants that pattern this way as underlyingly labiovelars and labiovelars.

⁷ Here one expects tix^wí’ s (based on the proposed NP cognate). NP /t’x^wi/ looks like it has been verbalized with /-hi/.

If there is a vowel in Nez Perce that is a cognate of the Sahaptin barred \ddot{i} , it is the Nez Perce epenthetic vowel that does not lengthen under stress. Thus S \ddot{i} corresponds to NP [i] in (64) and to NP [a] in (65). For more examples, see Table 4 below.

- (64) NP $\eta\acute{i}stis$ / η sts/ 'cactus'; cf. S $\acute{i}\ddot{s}t\acute{i}$ 'š
 (65) NP $sám'\chi$ / $sm'q$ / 'shirt'; cf. S $\acute{s}\acute{i}'m\chi$

Sometimes the epenthetic vowel carries inherent stress. I do not know how a phonologist would account for this, but I indicate it in my underlying forms with /'/, as in (66, 67). Though there are patterns, stress is morpheme inherent in Sahaptin in so far as there is no universally applicable principle such as the penultimate stress rule in Nez Perce.

- (66) NP $\eta\acute{i}tese$ / η' te-s-e/ 'I am putting [it] in'
 (67) S $\acute{i}'m\check{c}a\lambda'k$ 'break with the teeth'

There is palatalization before barred \ddot{i} in Sahaptin:

- (68) S $\acute{c}\acute{i}'mti$ 'new'; cf. NP $k\acute{i}mti$ / k' mti/
 (69) S $\acute{i}\check{s}\acute{c}\acute{i}'t$ 'road, trail, path'; cf. NP $\eta\acute{i}skit$ / η skt/
 (70) S $t\check{c}\acute{i}'\acute{s}$ 'hip'; cf. NP $t\acute{i}ks$ / tk s/ 'hip'

In the following examples, however, palatalization is blocked, and in each instance the Nez Perce cognate is marked for strong vowels. For the reconstructed form in (72) see the explanation that follows.

- (71) S $kk\acute{i}'m$ 'full'; cf. NP $kakmám$ / kkm' m/
 (72) S $tk'\acute{i}n$ 'look at, watch'; cf. NP $tak'\acute{a}yn$ / tk' 'yn/; PS * $tk'\acute{i}'yn$

Palatalization is also blocked in (73), but the cognates in the other dialects and in Nez Perce make it difficult to reconstruct a PS form.

- (73) CR $ksk\acute{i}'s$ 'little, small' (singular); $kk\acute{i}'s$ (plural); NW $iks\acute{i}ks$ (singular); $ik\acute{i}ks$ (plural); NP $kúckuc$ / k^wck^w c/

The core vowel of diphthongs lengthens under stress in Nez Perce:⁸

- (74) NP cikáawna /ckáwn-e/ 'I got scared'; ʔanáascikawna /ʔe-nés-ckáwn-e/ 'I got scared of them'; cf. S skáwn 'fear'

There are, however, some diphthongs in Nez Perce where lengthening does not occur. When this is the case and when we know the Sahaptin cognate, there is a simple short vowel in Sahaptin. I suggest that these Nez Perce diphthongs reflect an earlier **iw* and **iy*, and in my underlying forms I represent them simply as /w/ and /y/ between consonants (or between a consonant and the end of a word). Thus the /w/ diphthong is realized as [iw]:

- (75) NP líwn /l'wn-t/ 'burning'; cf. S lún
(76) NP yik'íwn /yk'wn-t/ 'sunshine'; S ičún⁹
(77) NP laymíwt /laym'wt/ 'the youngest'; cf. S láymut¹⁰

Example (77) is exceptional. More often the /w/ diphthong is realized as [aw] in words marked for strong vowels:

- (78) NP sáwn /s'wn-t/ 'being quiet'; cf. S súsun 'whisper';¹¹
(79) NP q'íilawn /q'ílwn-t/ 'looking back'; cf. CR & NW q'ínun 'see'
(80) NP t'áwn /t'wn-t/ 'guessing at the stick-game'; cf. possibly S ʔ'ún 'guess correctly at the stick-game'¹²

Similarly the /y/ diphthong is realized as [ay] in words marked for strong vowels:

- (81) NP ʔástay /ʔsty/ 'needle, awl, metal'; ʔastáyna /ʔsty-ne/ (accusative); cf. S ʔstí
(82) NP ʔáys /ʔys/ 'cow-parasit'; ʔayásna /ʔys-ne/ (accusative); cf. S íš
(83) NP tak'áyn /tk'ynt/ 'watching'; cf. S tk'ín 'watch'

⁸ Nez Perce has diphthongs /aw/, /ew/, /ay/, /ey/, /iw/, /oy/, and /uy/, and Sahaptin has aw, ay, iw, and uy. Some examples: NP /ckáwn/ & S skáwn 'fear'; NP /tévwyek/ & S táwyak 'sense a presence'; NP /haykátn/ & S aykátn 'be clear sky'; NP /méy-/ & S máy- 'in the morning'; NP /tin'eynék/ & N tináynak (CR tináynač) 'set (of sun, moon)'; NP /ʔíws/ & S íwš 'urine'; NP /pohoy/ 'fine snow' & NE puʔúy (CR & NW púuy ~ púwi) 'snow'; NP /lluy/ & S lílúy 'body grime'.

⁹ The ejective in Nez Perce and lack of it in Sahaptin might reflect an earlier diminutive derivation in Nez Perce or augmentative derivation in Sahaptin. In the Sahaptian and areally common sound symbolism, diminutivization favors ejectives.

¹⁰ This word is most likely connected by diminutive sound symbolism to S náymu 'relative, kinsman'.

¹¹ NP /cewcewn/ 'whisper' suggests a kind of sound symbolic variation that needs further investigation.

¹² PS *t' and *ʔ are generally preserved intact in both Nez Perce and Sahaptin.

- (84) NP *takláyn* /*tkl'yn-t*/ 'exchanging'; cf. S *tknín* 'roll hemp; exchange'
 (85) NP *capáakaykt* /*cepé-kyk-t*/ 'cleaning'; cf. S *sapákiik* 'clean'¹³;
 cf. also S ablauted *kyáak* 'clean' (adj.)
 (86) NP *wap'áykt* /*wap'yk-t*/ 'washing clothes'; cf. S *wáp'ik* 'wash
 clothes'
 (87) NP *sáyxsayx* /*s'yk^wsyk^w*/ '*Equisetum* sp.'; cf. S *siik^wsiik^w*¹⁴

The long *ii* in the Sahaptin word in (87) is unexpected. However, the /*y*/ diphthong in words not marked for strong vowels does appear to surface as a long [ii]. Thus cognates with underlyingly long /*ii*/ in Nez Perce and short *i* in Sahaptin can be analyzed as reflecting **iy* in words not marked for strong vowels:

- (88) NP *cikliin* /*ckl'yn-t*/ 'going home'; ?*ackliináapiika*
 /*ʔe-ckl'yn-ápyk-e*/ 'I returned from him/her'; cf. S *sklín* 'turn
 around, return'
 (89) NP *likliin* /*lkl'yn-t*/ 'going around, o'clock'; ?*esepéelkiliine*
 /*ʔe-sepé-lkl'yn-e*/ 'I passed it around'; cf. S *nɪknín* 'go around'

When the /*y*/ diphthong comes after a labiovelar it is realized as [uy] or [oy]:

- (90) NP *suk'úysuk'uy* /*sk^w'ysk^w'y*/ 'dark complexioned, dark horse';
 cf. S *šk^w'išk^w'i*
 (91) NP *cóqoy* /*cq^w'y*/ 'tepee top, tepee'; cf. NE *c'xúy* and CR *c'xuylí*
 'tepee'¹⁵

In Sahaptin there is no phonemic distinction between *ɨ* or *u* in the environment of a labiovelar (or labiouvular).

- (92) S *k^wɨ' ma* ~ *kúma* 'those'
 (93) S *k^wɨ' nč* ~ *k'únč* 'black pine lichen'

That such was not the case in Proto-Sahaptin is suggested by Nez Perce cognates where the vowel does not lengthen when the vowel was barred *ɨ* (94) but does lengthen when the vowel was /*u*/ (95).

- (94) S *čɨ' k^wš* ~ *čúkš* 'obsidian'; NP *súxs* /*s'k^ws*/; PS **čɨ' k^wš*
 (95) S *šɨ' k^wt* ~ *šúkt* 'recognizing'; NP *súukt* /*sukt*/; PS **šúkt*

¹³ My best Umatilla informant pronounces this word with long *ii*.

¹⁴ Here I am unsure as to reconstructing stress because the inherent stress differs in the NP and S words.

¹⁵ Here again the ejective in Sahaptin or the lack of it in Nez Perce might be the result of sound symbolism.

Most typically when unstressed before a consonant at the beginning of a word, the pronunciation is as a labiovelar/labiouvular in Sahaptin:

- (96) S k^wláawit ‘evening’; NP kuléewit ¹⁶
 (97) S k^wná ‘in that, there’; NP koná

In Sahaptin barred *ɨ* is probably most often realized as [u] before /w/.

- (98) S čanúwit ‘weaving’; cf. NP ken’íwit /ken’wit/
 (99) S šúwat ‘skining, butchering’; cf. NP ʔisiwe /ʔs’wen-t/
 (100) S púwat ‘putting baby in cradleboard’; cf. NP ʔipáwa /ʔp’wan-t/

Table 4 provides a sampling of Nez Perce words that are analyzable as being without underlying vowels, and which are pronounced with predictable epenthetic vowels that (unlike regular vowels) do not lengthen under stress. Where there are cognates in Sahaptin they are pronounced with barred *ɨ*.

Table 4. A sampling of Nez Perce morphemes without underlying vowels

Two Consonants	Three Consonants	Four Consonants
/ʔ’ n/ ‘lie inanimate’	/ʔnp/ ‘get, take’; S nɨp	/ʔlps/ ‘pith, heart’
/hn/ ‘say, tell’; S ɨ’ nn	/ʔ’ ps/ ‘flint’	/ʔskt/ ‘path, trail, road’;
/hp/ ‘eat’	/ʔtq ^w / ‘soil, clay’	S ɨšč’ t
/s’ s/ ‘navel’; S aš’ š	/ʔys/ ‘cow-parsnip’; S iš	/ʔsts/ ‘cactus’; S ɨšt’ š
/t’ n/ ‘chin, jaw’	/c’ kn/ ‘be impacted’;	/ʔsty/ ‘needle, awl,
/t’ t/ ‘tooth’; NE ɨt’ t	S ɨ’ kn	metal’; S ɨstí
	/c’ yn/ ‘defecate’	/c’xc’x/ ‘grass’; S c’ic’k
	/hpt/ ‘food’	/mymy/ ‘intestines’
	/hqs/ ‘eye matter, pus’;	/pq ^w pq ^w / ‘great-
	S ɨq’ š	grandparent; great
	/hqt/ ‘dead timber’	grandchild’
	/llk/ ‘pine nut’; S nɨn’ k	/psks/ ‘door’; S pč’ š
	/mqs/ ‘gall’; S mɨx’ š	/q ^w cq ^w c/ ‘meadowlark’;
	‘yellow’	S x ^w ’ t ^w
	/mt’p/ ‘elderberry’;	/qpqp/ ‘cottonwood’;
	S mɨt’ p	S xp ^w ’ p
	/nk ^w t/ ‘meat’; S nɨk ^w ’ t	/tk ^w ’kn/ ‘be straight’ ¹⁷ ;
	/plq/ ‘nape of neck’;	S tk ^w ’ t’ kn
	S pɨ’ x	/tlqn/ ‘stop’
	/psq/ ‘wood tick’	/tq ^w qn/ ‘be peeled,
	/pst/ ‘father’; S pš’ t	stripped’

¹⁶ My primary Umatilla informant has k^w’ láawit for ‘all evening’.

¹⁷ NP /tq^wqn/ ‘be peeled, stripped’ may be related sound symbolically to /tk^w’kn/ ‘be straight’.

/sm'q/ 'shirt'; S šī' mχ /tn'k'w'n/ 'die'
 /sqn/ 'fish fin' /yk' wn/ 'shine' (sun)
 /sq^wt/ 'tree base, stump'
 /stq/ 'mud'
 /tkc/ 'bridge'
 /tks/ 'hip'; S tčī' š
 /tms/ 'chokecherry';
 S tmī' š
 /tsq/ 'fat, grease'
 /ttk^w/ 'spotted fawn'
 /tys/ 'willow'; S ttī' χš
 /wlc/ 'knife'

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