

Topics in Chukchansi Yokuts Phonology and Morphology

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1. INTRODUCTION. Chukchansi Yokuts is a dialect of the Yokuts language family native to Central California. Yokuts dialects were spoken in the San Joaquin Valley and the surrounding foothills from the Fresno and Chowchilla rivers in the north down to the where the valley ends in the Tehachapi mountains in the south (Kroeber 1963). There were originally around forty Yokuts tribes, each speaking a distinct yet related dialect. Kroeber (1963) estimates that most of these dialects were mutually intelligible; Whistler and Golla (1986) state that this is probably not true, though dialects within a branch of the Yokuts family likely could understand each other. The Chukchansi tribe inhabits the foothills in the north of Yokuts territory, around present-day Ahwahnee and Coarsegold. Many Chukchansi still live in these foothills about 30 miles north of Fresno; this is where the headquarters of the tribe, Picayune Rancheria, is today. According to Kroeber's (1963) system of classification, based on the presence of the imperative suffix [-ka] and the form of the negative morpheme [ohom'], Chukchansi is a Valley dialect of the Yokuts family, not a Foothill dialect, despite its location in the Sierra foothills. While Whistler and Golla (1986) disagree with Kroeber over the integrity of Foothill group, they do agree that Chukchansi is a Valley dialect. Specifically, it is in the Northern Hill subgroup of the Northern Valley branch, closely related to the Yokuts dialects Chawchila and Dumna.

Chukchansi has all the major features common to the Yokuts family. Both stops (including affricates, which pattern with stops) and sonorants have contrastive glottalization, while stops also have contrastive aspiration. On the surface there are the five cardinal vowels, with contrastive length; unlike the Yokuts dialect of Wikchamni, there are no front rounded vowels (Gamble 1978). Stress is usually penultimate, though there are some complicating morphological factors. Chukchansi morphology is almost entirely suffixing, and is dependent-marking: nouns have cases, while possessors are marked in the genitive; adjectives optionally agree with nouns in case marking. Verbs have suffixes to indicate tense, aspect, voice, and mood, but do not mark participants,

neither subject nor object. Word order in Chukchansi is very free: all six canonical orders of subject, object, and verb have been elicited. Chukchansi is not polysynthetic: there is no productive process of incorporation.

Probably the most salient feature of the Yokuts language family is its complex verbal morphophonology, i.e., how the morphological structure of verbs interacts with and influences their phonological structure. Chukchansi is certainly no exception to this: the sound and shape of verbs, especially the vowels of the verb roots, can vary in profound and interesting ways. Much previous research on Yokuts languages has focused on how these verb roots vary, and there have been several different accounts describing their variation. In this paper I present three thorny points of Chukchansi verbal morphophonology: epenthesis and syllabification, the inventory of prosodic templates, and vowel quality changes, such as lowering and harmony. I exemplify these phenomena with the Chukchansi data I have collected and give several arguments in favor of my analysis of these areas.

1.1 LANGUAGE CONSULTANTS. Every fully-formed Chukchansi word in this paper was spoken by either of my two language consultants, Holly and Jane Wyatt of Coarsegold, California. They were raised by their Chukchansi-speaking grandmother, and thus are native speakers of Chukchansi. They are of course English speakers as well, and seem to be more comfortable in English than Chukchansi. However, while their Chukchansi speech contains many English loanwords, these all conform to Chukchansi phonology. Moreover, their use of Chukchansi syntax seems to be free of English influence, testifying to the robustness of their native-speaker intuitions and the resistance of their mental Chukchansi grammars to encroachment by English.

All the Chukchansi data in this thesis were elicited from the Wyatt sisters in two separate semesters of a field methods class at California State University, Fresno, as well as a few individual sessions outside of this class. My fellow researchers and I elicited the verb forms that are the focus of the analysis by asking them to loosely translate English sentences into Chukchansi, often with a supporting context given. I transcribed their Chukchansi speech by hand, while checking it for accuracy with fellow researchers. Because the focus of this thesis is on the forms of the verbs themselves and

not on the associated syntax and semantics, there should be few worries that the elicitation method has caused English interference on the Chukchansi data.

2. EPENTHESIS AND SYLLABIFICATION. The first phenomenon I investigate in this thesis is syllabification in Chukchansi and its effects on the surface forms of verbs. A strict maximum on syllable size and the stability of consonants requires the epenthesis of vowels in some surface forms and the shortening of vowels in others. The following surface verbs show the complementary distribution of high vowels with zero in different surface forms of certain verb roots, and of short vowels with long vowels in the surface forms of other verb roots. These surface forms all conform to a general CVX maximum on syllables. Syllables in Chukchansi can be either CV, CV:, or CVC, but not smaller or bigger: e.g., there are no VC, CV:C or CVCC syllables on the surface.¹ The fact that syllables can have a long vowel (CV:) or a coda (CVC) but not both is evidence for a bimoraic maximum and moraic codas. CVC and CV: are both bimoraic on this account, while bigger syllables such as CV:C would exceed the bimoraic maximum. Combined with constraints against onsetless syllables and complex onsets, nuclei, and codas, this describes the Chukchansi syllable as CV(X), with an onset, a vocalic nucleus, and up to two moras, either due to a long vowel or a coda consonant.

2.1. HIGH VOWEL~ZERO DISTRIBUTION. Many verb roots have an alternation where one form has a high vowel that does not appear in another form. For example, the root /ʃawk/ “buy” has the two forms [ʃawk-] (1) and [ʃawik-] (2) below:

- 1) ʃawk-eʔ
buy non past
“he will buy/buys”

- 2) ʃawik-taʔ
buy remote past
“he bought (a long time ago)”

Notice that both [ʃaw.k-eʔ] and [ʃa.wik-.taʔ] have syllables that fit the CVX syllable maximum. However, without the extra vowel [i], [ʃa.wik-.taʔ] cannot fit the CVX

maximum: both *[ʃaw.k-taʔ] and *[ʃawk-taʔ] contain illegal tautosyllabic consonant clusters.

Certain suffixes display this alternation as well. The recent past suffix /-t/ has the two forms [-t] (3) and [-it] (4) below:

3) hu:ʃe-t
drive-recent past
“he just drove”

4) tʃiʃ-it
cut-recent past
“he just cut”

Again, both [hu:ʃe-t] and [tʃi.ʃ-it] conform to the CVX syllable maximum. Note that without the extra vowel [i], [tʃi.ʃ-it] cannot fit this maximum: *[tʃiʃ-t] contains an illegal tautosyllabic consonant cluster. These examples show that a Chukchansi word epenthesizes the high vowel [i] so that all the underlying consonants can fit into CVX syllables: [ʃa.wik.taʔ], [tʃi.ʃit]. If all these consonants fit into CVX syllables without the extra vowel, that vowel does not appear: [ʃaw.keʔ], [hu:ʃet].

2.2. SHORTENING. Many verb roots also have an alternation where one form has a long vowel that appears short in another form. For example, the root /bala:ʃ/ “crawl” has the two forms [bala:ʃ-] (5) and [balaʃ-] below:

5) bala:ʃ-eʔ
crawl-non past
“he will crawl/crawls”

6) balaʃ-hil
crawl-middle past
“he crawled (yesterday)”

Once again, these forms, [ba.la:ʃ-eʔ] and [ba.laʃ-hil] follow the CVX maximum. Without a short vowel in the second syllable, *[ba.la:ʃ-hil] contains a superheavy CVVC syllable [la:ʃ], which is bigger than the CVX maximum allows. This

phenomenon must be shortening of an underlying long vowel to satisfy the CVX maximum, not lengthening of an underlying short vowel in an open syllable, because there are many words with CV syllables (i.e., open syllables with short vowels): [ʃa.wik.taʔ], [tʃi.ʃit], even [ba.la:.ʃeʔ] itself. Thus there is no phenomenon of lengthening (contrary to Collord 1968), but instead there is a general phenomenon of closed syllable shortening (as in Newman 1944, and all subsequent research using his data).

Some roots require either shortening or epenthesis, depending on whether the suffix attaching to them begins with a vowel or a consonant. For example, the root /be:wn/ “sew” has the two forms [bewn-] (7) and [be:win-] (8) below:

7) bewn-eʔ

sew non past

“he will sew/sews”

8) be:win-taʔ

sew remote past

“he sewed (a long time ago)”

Like all the preceding examples, [bew.n-eʔ] and [be:.win-taʔ] fit the CVX maximum. Neither *[be:wneʔ] or *[be:wntaʔ] can be syllabified to fit this maximum. Note that when shortening can syllabify all the underlying consonants, it is used instead of epenthesis: [bew.n-eʔ], not *[be:.wi.neʔ]. Only when shortening cannot syllabify all these consonants does epenthesis occur: *[bewn-taʔ] has too many consonants in a row to fit into CVX syllables, so the form [be:.win.taʔ] with the epenthetic vowel surfaces. Thus shortening takes precedence over epenthesis.

2.3. EPENTHESIS, NOT SYNCOPE. Above I described the phenomenon of epenthesis where certain words have high vowels in some situations that do not appear in others; the epenthesis is driven by a CVX syllable maximum. For example, the root /ʃawk/ “buy” has the non-past form [ʃaw.k-eʔ] and the remote past form [ʃa.wik-taʔ]; the vowel [i] that appears in the second form but not the first is epenthetic. This epenthesis account is present in Newman (1944), who calls this vowel an “interpolation” (Newman 1944, p. 25); the analyses that use his data, starting with Kuroda (1967), all agree with this. Collord (1968) gives the mirror-image account where the [i] vowel is actually

underlying, and syncopates in some forms: e.g., the underlying form of “buy” would be /ʃawik/, with the high vowel [i] syncopating to prevent the appearance of a weak open syllable in *[ʃa.wi.keʔ]. In Collord's account, high vowels syncopate in the environment VC_CV, while non-high vowels do not do so. This in itself is not troubling, since many phonological processes are sensitive to vowel height.

However, this account creates a puzzling situation: while he does give disyllabic roots with the same vowel in both syllables (e.g., /hewet/ “walk,” /holoʃ/ “sit,” and /balaʃ/ “crawl”), when there are mixed vowel qualities in a disyllabic root, the second vowel is always high; e.g., /ʃawik/ “buy,” /lihim/ “run,” /be:win/ “sew,” /ha:tim/ “sing,” /hoyin/ “fly,” /yunuʃ/ “shake.” There are no roots with other combinations of vowel quality; e.g., there are no roots with any of the forms /CeCaC/, /CiCaC/, /CaCeC/, /CaCoC/, or /CuCoC/. This gap does not follow from any general cross-linguistic principle, but must be accounted for by simply stipulating that disyllabic roots cannot have a mix of vowels when the second vowel is non-high. It is probably not an accident of data collection, either: Collord gives dozens of disyllabic verb forms, but none with these underlying shapes. Nor can any of the dozens of three-consonant verbs elicited from my consultants fit into these underlying patterns.

Under the syncope account, we either have to ignore or live with this uncomfortable gap. The epenthesis account easily solves this: the reason that the second vowel must be high is because this vowel is not really present underlyingly, but instead is an epenthetic vowel, which is always high in Chukchansi. In addition, this yields the generalization that only one vowel quality is ever present in the underlying form of most roots; the appearance of other vowel qualities on the surface is due to epenthesis. This suffices to make the epenthesis account superior to the syncope account.

3. SUFFIX-CONDITIONED PROSODIC TEMPLATES. As I wrote above, Archangeli (1983) was the first to analyze verb roots in Yawelmani, a Yokuts language, as having shape templates. Following the theory of Prosodic Morphology, proposed in McCarthy and Prince (1986), Archangeli (1991) described these templates as prosodic units: L (light syllable), H (heavy syllable), and LH (iambic foot). The templates take the one underlying vowel quality of the root and associate that quality to fill the moras of the prosodic unit. Certain suffixes condition the occurrence of specific templates in the

roots they attach to. When there is no such suffix to assign a template to the verb root, the root chooses its own “default” template. In Archangeli's analysis, both suffixes and roots must pick one of the three templates above (L, H, or LH) in the Yawelmani inventory.

In this section I show how prosodic templates work in Chukchansi. While the general outline above can account for some verbs, it cannot account for all of them. More templates than the three above occur in Chukchansi verb roots: there are HL roots, e.g. /we:le/ “stir,” and there are suffixes that impose LL templates on certain roots, e.g. [maxa-ʔa-n'] “he is collecting” from /ma:x/ “collect.” Roots and suffixes draw from different sets of templates: roots can choose an H, LH, or HL template, while suffixes either choose an LL or an LH template. Roots with apparent L templates are more accurately described as not having a template (Russell 1999). There are also many roots that act differently: they have more than one vowel quality, and no suffixes assign templates to them.

I do not have space in this paper to address all the issues surrounding where these templates occur in Chukchansi phonology, whether they are underlying or imposed by the grammar, and what exact linguistic mechanism is responsible for the association of roots, suffixes, and templates. These issues could take up the space of a whole paper much larger than this one, and they involve thorny areas of theoretical abstraction (e.g., richness of the base, co-phonologies vs. lexical constraints, etc.). I strive here to present a solid empirical foundation to the study of Chukchansi verbal morphophonology, and leave these theoretical questions to the future. Hopefully these data will provide a good basis for solving these questions.

Verb roots in Chukchansi fall into two main classes: roots that can be characterized with one underlying vowel that fills a root- or suffix-conditioned shape template, and roots that cannot. These latter roots have a mixture of underlying vowel qualities, and never receive a template from a suffix. I present these two kinds of roots, “one-vowel” and “multi-vowel,” separately.

3.1. ONE-VOWEL ROOTS. Newman (1944) first noticed that most verb roots in Yokuts languages have one underlying vowel quality, which can come in three shapes. Kuroda (1967) supported this, positing a rule of epenthesis that accounts for the

presence of different vowel qualities on the surface. Section 2 showed how the CVX syllable maximum forces vowel epenthesis and shortening in verb roots. Other than epenthesis and shortening, there are no changes to the surface shape of verb roots before most suffixes, i.e., suffixes that do not condition specific root templates.

In Chukchansi, there are four suffixes that condition a certain template to appear in one-vowel roots: the progressive /-ʔa-/, the adjunctive /-ʔhiy-/, the gerundive /-tʃ'-/, and the causative, which has the various forms /-la-/, /-e-/, and /-a-/, all of which can condition templates in roots. The progressive and causative are both non-final verbal suffixes; I show them with the final non-past /-n'/ and remote past /-taʔ/ suffixes, respectively. The adjunctive and gerundive are both nominalizing suffixes, so noun cases attach to them. I show the adjunctive in the nominative case, which causes glottalization of the final /y/, and the gerundive in either the nominative or accusative, whichever form surfaces without shortening of the root template vowel (predictable from syllable structure and epenthesis, as shown in Section 2). These suffixes condition different templates depending on where the root has two or three consonants; two-consonant LH roots moreover act differently from two-consonant L and H roots. Also, these suffixes do not condition template changes on any of the HL roots I have found; these roots always surface with HL template. I look at each of three groups of one-vowel roots (2C L and H; 2C LH; and, 3C) in turn.

3.1.1. Two-Consonant L and H Roots. The progressive and adjunctive suffixes condition an LL template in the two-consonant L and H roots they attach to, such as /xat/ “eat,” /tʃiʃ/ “cut,” and /se:p/ “tear (intr.),” and /ma:x/ “collect”, as in (9-12) below. The second syllable always has the vowel [a]; I argue in Section 4 that this vowel is part of the templatic root, not the suffix.

9) xata-ʔa-n' (LL template)
 eat-progressive-non past
 “he is eating”

10) sipa-ʔa-n' (LL)
 tear-progressive-non past
 “it is tearing (intr.)”

11) tʃifa-ʔhiy-' (LL)
cut-adjunctive-nominative
“the cutting place”

12) maxa-ʔhiy-' (LL)
collect-adjunctive-nominative
“the collecting place”

The gerundive and causative suffixes condition an LH template in the two-consonant L and H roots they attach to, as in (13-16). Like with the LL template, the second syllable vowel is always low, i.e. [a:]. However, the causative suffix, which is always /-la-/ with these roots, does not always condition a template on the root, as with the root /xat/ (17). Sometimes, the LH template conditioned by the causative suffix ends in a glottal stop, as with the root /waf/ “tell a story” (18). The distribution of different root forms (suffix-conditioned vs. root-conditioned template, LH template with long vowel vs. glottal stop) with the causative is random, as far as I can tell.

13) xata:-tʃ^h-i (LH template)
eat-gerundive-accusative
“one who eats (acc.)”

14) sipa:-tʃ^h-i (LH)
tear-gerundive-accusative
“one that tears (intr.) (acc.)”

15) tʃifa:-la-taʔ (LH)
cut-causative-remote past
“she made him cut”

16) maxa:-la-taʔ (LH)
collect-causative-remote past
“she made him collect”

17) xat-la-ta? (L – Default root template)

eat-causative-remote past

“she made him eat”

18) waʃaʔ-la-ta? (LH with ʔ)

tell a story-causative-remote past

“she made him tell a story”

3.1.2. Two-consonant LH Roots. Two consonant LH roots such as /pana:/ “arrive” and /xaya:/ “put down” have different forms with different suffixes. The adjunctive and gerundive suffixes do not cause any templatic changes on these roots (19-20); since the root has a default LH suffix, it is unclear whether the suffix conditions the same LH template on the root or conditions no template at all. The long root-final vowel predictably shortens before the adjunctive /-ʔhiy-/, due to the CVX syllable maximum. The progressive suffix also occurs with an LH template in these roots; however, the second syllable ends in a [y] (21). The causative form conditions an H template on the root, so that the second, long vowel disappears (22). This is the only verb form I have found in Chukchansi where the root is shorter with a template-conditioning suffix than in its regular form.

19) pana-ʔhiy-' (LH)

arrive-adjunctive-nominative

“the arrival place”

20) xaya:-tʃ'i (LH)

put down-gerundive-accusative

“one who puts down (acc.)”

21) panay-ʔa-n' (LH)

arrive-progressive-non past

“he is arriving”

22) xay-la-ta? (H)

put down-causative-remote past

“she made him put down”

3.1.3. Three-consonant Roots. Three-consonant one-vowel roots, such as /ʃawk/ “buy,” /tʃʰibn/ “get skinny,” /diʔʃ/ “make” (L template), /ha:tm/ “sing,” /be:wn/ “sew” (H template), /hewe:t/ “walk,” and /bala:ʃ/ “crawl” (LH template), act similarly before all four of these template-conditioning suffixes. These suffixes condition an LH template on the three-consonant roots they attach to, as in (23-28); the appearance of a long or short root vowel in the heavy syllable is predictable from the account in Section 2. The adjunctive /-ʔhiy-/ appears as [-hiy-] because the third root consonant fills the coda position; Hansson (2005) explains the disappearance of this consonant as a ranking of Dep-V over Max-C for templatic suffixes. Notice that L roots with the high vowel /i/, like /tʃʰibn/ and /diʔʃ/, surface with mid vowels [e] when they have the LH template, as in (23) [deʔeʃ-ʔa-nʰ] and (31) [tʃʰebe:n-a-taʔ].

23) deʔeʃ-ʔa-nʰ (LH template)

make-progressive-non past

“he is making”

24) bewen-ʔa-nʰ (LH)

sew-progressive-non past

“he is sewing”

25) hatam-hiy-ʰ (LH)

sing-adjunctive-nominative

“the singing place”

26) hewet-hiy-ʰ (LH)

walk-adjunctive-nominative

“the walking place”

27) ʃawa:k-itʃʰ-∅ (LH)

buy-gerundive-nominative

“one who buys (nom.)”

- 28) bala:ʃ-itʃ-Ø (LH)
 crawl-gerundive-nominative
 “one who crawls (nom.)”

The causative suffix shows a split: the /-la-/ suffix does not condition a template on the three-consonant roots it attaches to (29), but the suffixes /-e-/ and /-a-/ condition an LH template on three-consonant roots (30-31). Like in (25) above, these causative suffixes sometimes condition an LH template that ends in a glottal stop (18). Again, this distribution of different root forms with the causative suffix is probably random; sometimes the same root forms the causative in multiple ways, like /ha:tm/ (33-34).

- 29) ʃawik-la-taʔ (L – Default root template)
 buy-causative-remote past
 “she made him buy”

- 30) bewe:n-e-taʔ (LH)
 sew-causative-remote past
 “she made him sew”

- 31) tʃ'ebe:n-a-taʔ (LH)
 get skinny-causative-remote past
 “she made him get skinny”

- 32) balaʔʃ-a-hil (LH with ?)
 crawl-causative-middle past
 “she made him crawl”

- 33) ha:tim-la-taʔ (H – Default root template)
 sing-causative-remote past
 “she made him sing”

- 34) hataʔm-e-t (LH with ?)
 sing-causative-recent past
 “she made him sing”

3.2. MULTI-VOWEL ROOTS. There is a long list of roots that do not fit the above patterns. These roots are usually two or three syllables and contain more than one vowel quality. They can have any shape, and can end in a vowel or consonant, e.g., /hu:ʃe/ “drive,” /tʃ'edma/ “think,” /ʔoyi:sa/ “be happy,” /gewe:wa/ “lie down,” /hayk'it/ “finish,” and /lak'wun/ “get down from.” The mixture of different vowel qualities may be evidence for Collord (1968)'s suggestion that these roots were once morphologically complex, but have become opaque and unanalyzable. In fact, there is a group of multi-vowel roots that do appear analyzable: inchoative deadjectival verbs (“get/become X”) that have the pattern CVCe:Ca. While the C's and V are supplied by the adjective root, their shape is strongly reminiscent of the other Chukchansi suffixes above that demand a template in the root. Examples include [gaye:sa-] “get better” from /gays/ [gayis] “good,” [hoʃe:wa-] “get cold” from /hoʃw/ “be cold,” and [leme:k'a-] “get dark” from /limk'/ [limik'] “dark” (the second vowel in [gayis] and [limik'] is epenthetic). I analyze these verbs as having a suffix /-a-/ that imposes an LH template on the root and demands the last vowel be mid and front, i.e. [e:]: /gays-a-/ → [ga.ye:.s-a-].

Like HL roots, multi-vowel roots never change before the template-conditioning suffixes above. The adjunctive /-ʔhiy-/ , causative /-la-/ and /-e-/ , and gerundive /-tʃ'-/ never change the form of these roots. The progressive uses the suppletive form /-xo-/ that appears when it does not condition a template on the root. The forms below show multi-vowel roots with all these suffixes:

- 35) ʔoyi:sa-ʔhiy-'
 be happy-adjunctive-nominative
 “the happy place”
- 36) hu:ʃe-la-ta?
 drive-causative-remote past
 “she made him drive”
- 37) lak'wun-e-ta?
 get down from-causative-remote past
 “she made him get down from”

38) hayk'it-itʃ'-Ø
finish-gerundive-nominative
“one who finishes”

39) tʃ'edma-xo-n'
think-progressive-non past
“he is thinking”

There is one exception to multi-vowel roots not being changed by suffixes: in the gerundive forms for /hu:ʃe/ “drive” and /ʔohyo/ “search,” the last vowel of the root is long:

40) ʔohyo:-tʃ'-i
search-gerundive-accusative
“one who searches (acc.)”

3.3. TEMPLATE INVENTORY. I now turn to look at the template inventory. From the data section, the inventory for default, root-chosen templates is L, H, LH, and HL, while the inventory for suffix-conditioning templates is H, LL, and LH. Following Russell (1999), I dispense with the L template, since the form of L roots is predictable without a template. Moreover, unlike other one-vowel roots that appear with the template on the surface before all non-template-conditioning suffixes, L roots can have heavy first syllables, as with the verbs [tʃiʃ.-taʔ] from /tʃiʃ/ “cut” (41) and [ʃaw.k-eʔ] from /ʃawk/ “buy” (42, copied from 1).

41) tʃiʃ-taʔ
cut-remote past
“he cut (a long time ago)”

42) ʃawk-eʔ
buy non past
“he will buy/buys”

This does not make sense if an L template is demanded of these roots by an alignment constraint, but is predictable if there is no L template and these roots syllabify like other Chukchansi words.

The data section also shows an important difference between Chukchansi and the related Yawelmani Yokuts dialect. Archangeli (1983) and subsequent analyses of Yawelmani have used the same prosodic templates for roots as for suffixes, but the LL suffix-conditioned template posited here does not occur in Chukchansi roots as a default template. It can be argued that in a language, both suffixes and roots should draw from the same inventory of templates. However, while I posit an HL default root template, there are no suffixes that condition HL templates in the roots. Chukchansi also has many H roots (about ten percent of all verb roots elicited), but the lone suffix-conditioned H template is the causative form of two-consonant LH roots such as /xaya:/ “put down,” e.g., [xay-la-taʔ] in (43).

43) xay-la-taʔ

put down-causative-remote past

“she made him put down”

Such two-consonant LH roots are exceedingly rare in the Chukchansi speech of my consultants: out of over 250 verb roots that have been elicited by fellow researchers and me, only four two-consonant LH roots have been found, less than two percent of the total. I think they constitute a closed set of lexical exceptions with a special morphology, so that the H template (and the progressive [xayay-ʔa-n'] with the mysterious [y]) is not a regular or active part of Chukchansi grammar. Thus the inventory of suffix-conditioned templates in Chukchansi is LL and LH, while the inventory of default root templates is H, LH and HL.

4. A-ABLAUT. In this section I turn from the prosodic structure of verb roots to look at the segmental changes that occur in them. One such changes in Chukchansi is [a]-ablaut, where the second vowel of a two-consonant root with a suffix template becomes [a(:)]. I argue that this [a(:)] is part of the verb root, not the suffix. I then propose a novel analysis, that all template-conditioning suffixes in Chukchansi impose disyllabic templates on one-vowel roots, along with certain of the different segmental changes above. This analysis unites the behavior of all such suffixes before both two- and three-

consonant roots; however, it needs more data and more argument to decide firmly whether this is indeed the best account of root templates in Chukchansi.

I present verb forms that show the effects of [a(:)]-ablaut of the second syllable of roots. [a(:)]-ablaut occurs when two-consonant roots receive suffix-conditioned templates, e.g., the progressive form of /t'ul/ “burn” (44) and the gerundive form of /tʃiʃ/ “cut” (45):

44) t'ula-ʔa-n'
burn-progressive-non past
“he is burning (tr.)”

45) tʃiʃa:-tʃ'-i
cut-gerundive-accusative
“one who cuts (acc.)”

These forms are similar to the L and H two-consonant roots from Section 3 with [a(:)] in the second syllable. I repeat (10-11) and (14-15) below as (46-49):

46) sipa-ʔa-n' (LL)
tear-progressive-non past
“it is tearing (intr.)”

47) tʃiʃa-ʔhiy-' (LL)
cut-adjunctive-nominative
“the cutting place”

48) sipa:-tʃ'-i (LH)
tear-gerundive-accusative
“one that tears (intr.) (acc.)”

49) tʃiʃa:-la-taʔ (LH)
cut-causative-remote past
“she made him cut”

I now investigate the segmental change of a(:)-ablaut that occurs when LL and LH templates are conditioned on two-consonant roots (that are not LH by default). I argue that contrary to some analyses (such as Collord 1968), the [a(:)] must be part of the template root, not the suffix. This leads me to examine how these roots differ from three-consonant roots that receive suffix-conditioned templates. I argue that other than segmental changes, there is no difference between the two types of roots when they receive these templates. I go on to suggest that the four template-conditioning suffixes in Chukchansi may be imposing the same templates on these roots, too.

When two-consonant roots (that are not LH) receive suffix-conditioned templates, an [a]-vowel appears before the suffix. For instance the root /tʃiʃ/ has the adjunctive form [tʃiʃa-ʔhiy-'] (47) and the causative form [tʃiʃa:-la-taʔ] (from 49), while the root /se:p/ has the progressive form [sipa-ʔa-n'] (from 46) and the gerundive form [sipa:-tʃ'-i] (from 48). I assumed before that this [a]-vowel is part of the root with the suffix-conditioned template, rather than part of the suffix; I now argue that my assumption is correct. Note that the [a(:)] is not a special case of low-vowel epenthesis, since *[sip-ʔa-n'] and *[tʃiʃ-la-taʔ] fit the CVX syllable maximum. As in the case of epenthesis vs. syncope, there are two alternate analyses possible: either the template-conditioning suffixes that attach to two-consonant L and H roots begin with /a(:)/, or when these roots receive an LL or LH template, their second vowels must become low.

If the [a(:)] is part of the suffix, it must impose an L template on the root, or in the Russell (1999) analysis, select the no-template grade: e.g., /se:p/ would become [sip-], as in [sip-aʔa-n'] and [sip-a:la-taʔ], and /ma:x/ “collect” would become [max-], as in [max-aʔa-n'] and [max-a:la-taʔ]. The forms of the suffix allomorphs would be [-aʔa-] (progressive), [-aʔhiy-] (adjunctive), [-a(:)tʃ'] (gerundive), and [-a:la-] (causative). Compare these with the allomorphs of the same suffixes for three-consonant roots: [-ʔa-], [-hiy-], [-i)tʃ'], and [-la-]. The main difference is that in the former set an [a(:)] occurs at the beginning of each suffix, while the rest of the suffix is identical to the forms in the latter set (the [ʔ] of the adjunctive suffix cannot be syllabified with three-consonant roots, and is deleted, while the [i] of the gerundive suffix is epenthetic). There would appear to be a massive coincidence that all the template-conditioning suffixes begin with an extra /a/-vowel when they attach to two-consonant roots, and no good explanation is at hand.

If the [a(:)] is part of the root with the suffix-conditioned template, two important parallels emerge. First, all the suffixes now have the same underlying forms for two- and three-consonantal roots, as in the progressive forms repeated from (10) and (23) above, as (50) and (51), and the gerundive forms repeated from (14) and (27) above, as (52) and (53), respectively:

50) sipa-ʔa-n' (not [sip-aʔa-n'])

tear-progressive-non past

“it is tearing (intr.)”

51) deʔeʃ-ʔa-n'

make-progressive-non past

“he is making”

52) sipa:-tʃⁿ-i (not [sip-a:tʃⁿ-i])

tear-gerundive-accusative

“one that tears (intr.) (acc.)”

53) ʃawa:k-itʃⁿ-Ø

buy-gerundive-nominative

“one who buys (nom.)”

This takes care of the odd coincidence that template-conditioning suffixes all begin with an extra /a(:)/ after two-consonant roots. In its place is the stipulation that the second syllable of such a root with a suffix-conditioned template must have a low vowel. Though this may seem just as arbitrary, segmental changes in roots associated with templates occur elsewhere in Chukchansi. Such changes includes the high vowel lowering of three-consonant L roots with the LH template (see 23-26, 30-31 above), the glottal stop codas in the roots of some causative forms with the LH template (see 32 and 34 above), and the multi-vowel roots that are composed of the suffix /-a-/ and a root with an LH template and an [e:] vowel, e.g. /gays/ “good” → [ga.ye:.s-a-] “get better.”

Second, the gerundive /-tʃⁿ-/ and causative /-la-/, /-e-/, /-a-/ suffixes now condition the same LH templates on both two- and three-consonant roots (52 and 53). Thus these

suffixes have a single form and template selection for all one-vowel roots, instead of having a split between two- and three-consonant roots. The progressive /-ʔa-/ and adjunctive /-hiy-/ suffixes condition LL templates on two-consonant roots (50) and LH templates on three-consonant roots (51). However, I argue that this split is only apparent. Both root shapes are accounted for by having a disyllabic [σσ] template, with no specification for syllable weight. Two-consonant roots will surface as LL since both consonants are onsets ([si.pa.-ʔa-n'] in 50), while three-consonant roots will appear as LH with the third root in the coda ([de.ʔeʃ.-ʔa-n'] in 51).

This analysis can be extended to the gerundive and causative suffixes, which attach to roots that have an LH template. If this template is simply disyllabic, these suffixes would also have to demand that the root have a heavy second syllable, either through a long vowel ([si.pa:-tʃ'-i] in 52) or a coda ([ʃa.wak.tʃ'-i] “one who buys (acc.),” the accusative counterpart to [ʃa.wa:k-itʃ'] in 53). There is separate evidence for such a demand by the gerundive suffix: some multi-vowel roots have a lengthened final vowel in the gerundive form, such as /hu:ʃe/ “drive” (54) and /ʔohyo/ “search” (55, repeated from 40).

54) hu:ʃe:-tʃ'-i
 drive-gerundive-accusative
 “one who drives (acc.)”

55) ʔohyo:-tʃ'-i
 search-gerundive-accusative
 “one who searches (acc.)”

Of course, I need to find more data like (54) and (55) to support this analysis, and argue out all that this analysis entails, integrating it with the picture of root templates in general. For now this remains a very interesting alternative analysis that unites all template-conditioning suffixing in Chukchansi.

5. CONCLUSION. I have presented a lot of new data on Chukchansi verbs, and explored how best to account for the morphophonology of the verbs presented. The first phenomenon I investigated in this thesis was the distribution of high vowels with zero in different surface forms of verbs with the same roots and suffixes. I argued that this

distribution is due to epenthesis, not syncope, of the high vowels. I then explored the position of prosodic templates in Chukchansi. Like in other Yokuts languages studied, both roots and suffixes can condition these templates. Unlike in some descriptions of other Yokuts languages, the inventory for root-conditioned templates is different from the inventory for suffix-conditioned templates. I argued that the former inventory comprises H, LH, and HL templates and the latter LL and LH templates. I finally examined the segmental change of a-ablaut in two-consonant roots that accompany templates. I argued that when template-conditioning suffixes attach to two-consonant roots, the [a] vowel that appears between them belongs to the root, not the suffix. This led me to suggest that these suffixes condition the same disyllabic template on both two- and three-consonant verbs, rather than different LL and LH templates.

There are several avenues for future research in the morphology and phonology of Chukchansi verbs. I proposed that all template-conditioning suffixes in Chukchansi condition a disyllabic template, and some further demand that the second root syllable be long, resulting in an LH root. More data need to be elicited to see if there are other suffixes that make this demand. I suggested that two-consonant LH roots are a closed class that is not morphologically productive in Chukchansi. If a significant number of such roots are elicited, this suggestion is definitely wrong. The phenomenon of segmental changes in verb roots, such as the a-ablaut explored above, is another ripe avenue for Chukchansi research. There are several suffixes that require more elicitation: the distributive and inchoative suffixes, which demand [e]-ablaut, and the causative, which sometimes causes glottal stop infixation. It also needs to be seen if other suffixes cause segmental changes, and if these changes occur in any situation other than with root templates. Lastly, I want to know if the template inventory of Chukchansi has been completely examined, or if there are other root- or suffix-conditioned templates.

Notes

- 1 A handful of words with syllables exceeding the CVX maximum have been elicited: [ʃi:ʃwi.lit] “was embarrassed” (CVVC [ʃi:ʃ] or CCV [ʃwi]), [maal.deʔ] “sticks tongue out” (CVVC [maal]), [lee.li.layʃʔ] “teacher” (CVCC [layʃʔ]), [k'a.maa.newʃtaʔ] “dried himself a while ago” (CVCC [newʃ] or CCVC [ʃtaʔ]). Note that all the examples involve the glides or liquids [w y l].

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