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**Syllable Types in Yawelmani**

1. **Introduction**

In this essay, I analyze the data in (1), which shows the attested syllables in Yawelmani.

1. Attested syllables in Yawelmani

 **INITIAL GLOSS MEDIAL GLOSS FINAL GLOSS**

CV **t’o**.yix.k’a ‘cure!’ xat.**xa**.tal ‘might eat repeatedly’ t’uy.**k’a** ‘shout!’

CVV **woo**.wul.k’a ‘stand up!’ i.**lee**.wis.xa ‘let X fan self’ not attested

 CVC **t’uy**.k’a ‘shoot’ t’o.**yix**.k’a ‘cure!’ xa.**tal** ‘might eat’

By analyzing the attested syllables in Yawelmani, I accomplish three things. First, I determine the maximal syllable in Yawelmani. In other words, I determine whether it is CVX or CVXC. Second, I provide a description of the requirements of onset, rime, nucleus, and coda in Yawelmani. In other words, I try to ascertain whether the onset, rime, nucleus, and coda are obligatory in Yawelmani. Lastly, I apply the rule approach to derive the syllable structures of Yawelmani.

In the analysis, I argue that CVX is the maximal syllable. Then I show why linguists would posit CVX as being the maximal syllable. Then, I discuss the onset, rime, nucleus, and coda requirements in Yawelmani. By doing this I show why everything but the coda is obligatory in Yawelmani and why the coda is optional.

1. **Analysis**

This section provides an analysis of syllable structures in Yawelmani. This section is organized as follows. In section 2.1, I determine whether CVX or CVXC is the maximal syllable in Yawelmani. In section 2.2, I provide a description of the requirements of onset, rime, nucleus, and coda in Yawelmani. In section 2.3, I apply the rule approach to derive the syllable structures of Yawelmani.

**2.1 Determining the maximal syllable**

 In Yawelmani, maximal syllables can potentially be CVX or CVXC. In this section, I show that CVX is the maximal syllable. In doing so, I provide two argument for CVX.

I begin by analyzing CVXC as the maximal syllable. If CVXC is the maximal syllable then it should be attested in the language. According to the data in (1), however, there are no attested syllables which show a syllable type CVXC. The only attested syllable types are the following: CV, CVC, CVV. The lack of CVXC syllables in (1) provides evidence against CVXC and for CVX. Next, I discuss the “Closed Syllable Vowel Shortening” rule as evidence that supports positing the maximal syllable as CVX. Consider the following vowel length alternation data below in (2) taken from Peng (2013).

1. Vowel length alternation data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **A.** | **Gloss** |  | **B.** | **Gloss** |
|  |  |  |  |  |  |
| a. | dos-hin | ‘reports’ | a’ | do:s-ol | ‘might report’ |
| b. | won-hin | ‘hides’ | b’ | wo:n-ol | ‘might hide’ |
| c | mek'-hin | ‘swallows’ | c’ | me:k'-al  | ‘might swallow’ |
| d. | hiwet-hin | ‘walks’ | d’ | hiwe:t-al | ‘might walk’ |
| e. | c'om-hun | ‘destroys’ | e’ | c'o:m-al | ‘might destroy’ |
| f. | sog-hun | ‘pulls out the cork’ | f’ | so:g-al | ‘might pull out the cork’ |

In the data above, column A reveals words that have a root with a short vowel and column B reveals words that have a root with long vowels. Also, the short root vowels in column A precede two consonants. The long vowels in B precede only one consonant. An example of a short root vowel preceding two consonants in column A is *do****s****-****h****in* ‘reports’, and a long vowel preceding only one consonant in B is *do:****s****-ol* ‘might report.’ The distinction made here is derived from the fact that the suffix in column A has a consonant at the beginning. On the contrary, column B has a suffix that is vowel-initial. These data point towards there being a length alternation process which is based on the number of consonants that follow both the short and long vowels. With the data in (2), there are two possible underlying representations given that the data shows two surface forms for each root. One representation would consist of a short vowel as seen in column A and one would consist of a long vowel as seen in column B

If we were to take the root with the short vowel as being the underlying form, then a lengthening rule must be posited as seen in (3a). On the contrary, if we were to take the root with a long vowel as being the underlying form, then a vowel shortening rule must be posited as seen in (3b). The rules, taken from (Peng) 2013, can be seen in (3).

1. a. V → V: / \_\_ CV b. V: → V / \_\_ CC

Prior to presenting the vowel length alternation data, I mentioned discussing the “Closed Syllable Vowel Shortening” rule as evidence to support the positing of CVX. However, in (3) there are two rules present. In order to make a case for (3b), that is, the “Closed Syllable Vowel Shortening” rule, I first start by showing why (3a) is incorrect. According to (3a), a vowel should be lengthened if it precedes a consonant-vowel sequence. This rule, however, appears to be inconsistent with some of the data in (2). In (2d) and (2d’), we have *hiwet-hin* ‘walks’ and *hiwe:t-al* ‘might walk.’ Given that the short vowel *i* precedes a consonant-vowel sequence, the rule in (3a) predicts incorrectly that *i* should be lengthened.

Moving past the rule in (3a) and taking a look at (3b), we can see that the vowel shortening rule is consistent with the data in (2). All of the vowels in column A which precede two consonants are short vowels. While (3a) indicates a pattern which has been proven to be inconsistent, (3b) shows a pattern of consistency. Overall, this leads to the preference of the rule in (3b) which points to long vowels as being underlying. Words such as *dos-hin* in (2a) have the underlying form */do:s-hin/.*

According to Peng (2013: 177), “the pattern regarding the distribution of long vowels in Yawelmani is related to a cross-linguistic pattern observed in many languages.” In order to generate a further understanding of this “cross-linguistic pattern,” and see how the rule in (3b) and data in (2) relate to the maximal syllable in Yawelmani, I refer to syllabification. In doing so, I provide an example of how a word in the data in (2) is syllabified. Consider how linguists syllabify (2a), [dos.hin], and (2a’), [do:s-ol], which can be seen below in (4) taken from Peng (2013).

1. a. [dos.hin] b. [do:.sol]

In (4a), the short vowel *o* is present in a syllable which ends with the consonant *s*. This type of syllable is described by linguists as a *closed syllable.* In (4b), however, a long vowel *o:* is present in a syllable which does not end in a consonant. Here, the syllable in which we see *o:* is vowel-final. This is what linguists refer to as an *open* *syllable*. When analyzing the distribution of both short and long vowels in relation to open syllables and closed syllables, short and long vowels appear in open syllables, but it is only short vowels that appear in closed syllables cross-linguistically. Long vowels tend to be shortened when they show up in closed syllables through affixation. According to Peng (2013: 177), “this cross-linguistic pattern of vowel distribution is precisely what we find in Yawelmani.” Because of this, linguists prefer the “Closed Syllable Vowel Shortening” rule in (3b).

Moving forward, I can now use this information to provide further evidence for positing CVX as the maximal syllable. In (5), I show the attested syllable types for the data in (2), which all are consistent with the vowel shortening rule.

1. Syllabification of vowel length alternation data
2. **Syllable Type B. Syllable Type**
3. dos.hin CVC.CVC a.’ do:.sol CVV.CVC
4. won.hin CVC.CVC b.’ wo:.nol CVV.CVC
5. mek’.hin CVC.CVC c.’ me:.k’al CVV.CVC
6. hi.wet.hin CV.CVC.CVC d.’ hi.we:.tal CV.CVV.CVC
7. c’om.hun CVC.CVC e.’ c’o:.mal CVV.CVC
8. sog.hun CVC.CVC f.’ so:.gal CVV.CVC

We can see that the three syllable types in (1), CVC, CVV, and CV, are all attested in this set of data. This suggests that CVX is the maximal syllable in Yawelmani. If, however, I were to take CVXC as being the maximal syllable, then I would end up with the data seen below in (6).

1. Unattested data

a’ \*do:s.ol CVVC.VC

b’ \*wo:n.ol CVVC.VC

c’ \*me:k.’al CVVC.VC

d’ \*hi.we:t.al CV.CVVC.VC

e’ \*c’o:m.al CVVC.VC

f’ \*so:g.al CVVC.VC

Looking at the data above, if CVXC were to be posited as the maximal syllable, then we would not expect vowel shortening to occur. The data in (6), however, is unattested. Consider the fact that the word *dos.hin* cannot take the form of *do:s.hin* because of vowel shortening. This would also imply that words such as *won.hin* cannot take the form *wo:n.hin*. Due to the vowel shortening rule, the data in (1) has no attested syllables with the CVXC structure. Instead the words take on the CVX structure. Overall, the data in (1) accompanied by the vowel shortening rule in (3b) provides evidence against positing CVXC as the maximal syllable. We can concluded that CVX is the maximal syllable.

**2.2 Syllable requirements**

In this section, I analyze the requirements of onset, rime, nucleus, and coda. In doing so, I address two questions. First, I show whether or not onset, rime, nucleus, and coda are obligatory in Yawelmani. Second, I explain what each of these sub-syllabic units require. The data in (1) shows there are three types of syllables: CV, CVV, and CVC.

I first start by discussing the requirements of the onset. There are three requirements to be considered. First, the data in (1) shows that all syllable types have an onset. This is indicated by the fact that all the words begin with a consonant. Therefore, an onset is obligatory in Yawelmani. Second, the obligatory onset can only consist of one consonant. Looking at the data in (1), this can be seen with words such as ***t’****o.yix.k’a* ‘cure!’ and ***t’****uy.k’a* ‘shoot.’ Simple onsets are obligatory whereas complex onsets are not allowed. Third, a consonant located in the middle of a word, known as an intervocalic consonant, functions as the onset of the following syllable. It does not function as the coda of the preceding syllable. Therefore, the intervocalic *t* in *xa****t****al* ‘might eat’, taken from the data in (1), is parsed as *xa.****t****al,* and not as *xa****t****.al.* This fact about the intervocalic consonant also suggests that onset is obligatory, but coda is not. These three requirements are summarized below in (7).

1. Onset requirements
2. Onset is obligatory.
3. Onset is simple.
4. A single intervocalic consonant is syllabified as the onset.

 Second, I analyze the requirements for the rime in Yawelmani. The rime consists of two parts. They are the nucleus, and the coda. There are two requirements for the rime in Yawelmani. First, the rime must have a minimum of one segment, and this segment must be a vowel. An example taken from (1) would be ***t’o****.yix.k’a* ‘cure.’ In a case where the vowel nucleus is missing, a C can be substituted in place of it, however, this is not necessary in Yawelmani. Moving onto the second requirement, I had established in the previous section that the maximal syllable in Yawelmani is CVX. This indicates that the rime can include at most two segments VX, a short vowel and a coda consonant or a long vowel. An example of this would be ***woo.****wul.k’a* ‘stand up’ which consists of the CVV structure, or ***t’uy****.k’a* ‘shoot’ which consists of the CVC structure. These requirements can be seen below in (8).

1. Rime requirements
2. Rime has a minimum of one segment, V.
3. Rime is made up of at most two segments: VV or VC.

 Third, there are the requirements for the nucleus in Yawelmani. There are three observations to be made about the nucleus. First, the nucleus being obligatory is a universal requirement in all syllables, and it happens to be true with Yawelmani. Second, the nucleus can contain up to two vowels, but they must be long vowels. For example, *o:* in *w****oo****.wul.k’a* ‘stand up.’ Third, looking at the data in (1), long vowels are not attested in word-final position. The nucleus requirements can be seen summarized below in (9).

1. Nucleus requirements
2. The nucleus is obligatory.
3. The nucleus can be composed of a short vowel or long vowel
4. The nucleus composed of a long vowels is only attested in word-initial and word-medial position.

 Finally, I address the requirements for the coda. First, the coda is optional. As mentioned earlier, intervocalic consonants function as the onset of the following syllable, and not as the coda of the preceding syllable, making the coda optional. The data in (1) consists of words such as ***t’o****.yix.k’a* ‘cure!’ and *t’uy.****k’a***‘shout!’ have a CV structure with no coda. Second, if the coda is present, it includes maximally one consonant. This, too, is indicated by the data in (1). For example, take the words *t’u****y****.k’a* ‘shoot’ and *xa.ta****l*** ‘might eat’ where the bolded letters, *y* and *l*, are a part of a CVC structure indicating the coda is present. Coda requirements can be seen summarized below in (10).

1. Coda requirements
2. The coda is optional.
3. If present, the coda includes maximally one consonant.

 Throughout this section, I have discussed the requirements of the onset, rime, nucleus, and coda in Yawelmani. By summarizing the requirements for each, I have indicated under conditions they appear in Yawelmani.

**2.3** **The Rule Approach**

When it comes to syllable construction, there are two approaches that linguists can utilize. One of these two approaches is known as the rule approach. According to Peng (2013: 201), “the rule approach we present here is modeled mostly on Steriade (1982) and Levin (1985).” Consider the syllable in (11) Steriade (1982) represents.

1. The internal structure of a syllable

Syllable σ

Sub-syllabic units O R



Skeletal/timing tier C C VV C C



Melodic tier c c v v c c

According to the structure in (15), the syllable structures are composed of a strong of C’s and V’s. The C’s indicate slots where consonants go and V’s indicate slots where vowels go. The lowercase letters, c and v, represent consonant and vowel melody which link to the C and V slots.

 Consider the following Yawelmani words: *t’o.yix.k’a* ‘cure,’ *i.lee.wis.xa ‘*let X fan self,’ and *xa.tal* ‘might eat.’ Through the use of the rule approach, I analyze the syllabification of the three given Yawelmani words. The task at hand is a simple one, so the rule approach will do. Before deriving the syllable structure, however, I must state the rules below in (12) as taken from Peng (2013).

1. a. project a syllable σ from each V

b. Adjoin a consonant to the immediate left of the rime as the onset of the following syllable σ

c. Adjoin a consonant to the left of an onset to this onset.

d. Adjoin a consonant to the right of a rime to this rime.

 It should be noted that the rule in (12c) adds a consonant to the left of a cv syllable. In return, this produces complex onsets. According to Peng (2013: 202), “the rule in (12d) appends a consonant to the preceding rime, yielding simple or complex codas.” What’s important in mentioning these two rules is that they are not present in every language. Now, I consider how the rules in (12) will derive the syllable structures for the three Yawelmani words given above. Yawelmani does not allow complex onsets, therefore the rule in (12c) is irrelevant. In (13) and (14) below, I show the result of applying the rules in (12a) and (12b) to the underlying forms of *t’o.yix.k’a* ‘cure,’ *i.lee.wis.xa ‘*let X fan self,’ and *xa.tal* ‘might eat.’

1. Project a syllable σ from each V

a. b. c.

 σ σ σ σ σ σ σ σ σ

 R R R R R R R R R

 C V C V C C V C V C V V C V C C V C V C V C

 t' o y i x k’ a i l e w i s x a x a t a l

Looking at (13), it can be seen that the application of (12a) yields a syllable, adding on to the rime on each vowel melody. Also, it is important to note that the dotted lines stemming from each V marks a new structure within the syllable structure.

1. Adjoin a consonant to the immediate left of the rime as the onset of the following σ

a. b. c.

 σ σ σ σ σ σ σ σ σ

 O R O R O R O R O R O R O R O R O R

 C V C V C C V C V C V V C V C C V C V C V C

 t' o y i x k’ a i l e w i s x a x a t a l

The rule in (12b) ensures that a consonant and its immediate following vowel are conjoined into a core cv syllable as seen in (14). For example, in (14a) *t’* is conjoined with *o*, *y* is conjoined with *i,* and *k’* is conjoined with *a*. Once again, dotted lines are being used to mark new structures through the application of the rule in (12b), and the solid lines mark the old structures I began with in (13).

Due to this application, that is, the rule in (12b), there are three consonants which remain unsyllabified: *x, s,* and *l*. Because these three consonants were not accounted for by the rule in (12b), this leads to the final step as seen below in (15) which accounts for the unsyllabified consonants.

1. Adjoin a consonant to the right of a rime to this rime.

a. b. c.

 σ σ σ σ σ σ σ σ σ

 O R O R O R O R O R O R O R O R O R

 C V C V C C V C V C V V C V C C V C V C V C

 t' o y i x k’ a i l e w i s x a x a t a l

After applying the rule in (12d), it can be seen in (15) that *x, s, and l,* no longer remain unsyllabified. This approach to syllable construction which I have demonstrated is also known as a bottom-up approach. The name is self-explanatory in that construction of the syllable begins at the bottom, starting with the vowels, and then proceeds to the consonants. The consonants get added to projected syllables where they either form complex codas or complex onsets. Throughout each of the steps, I have shown that syllabification is a process which is driven by their being vowel and consonant melodies which are available and unsyllabified.

1. **Conclusion**

In conclusion, I have analyzed the set of data in both (1) and (2). Throughout this process, I analyzed these two given sets of data to provide evidence for positing CVX as the maximal syllable in Yawelmani. I began by addressing why CVXC was not a possibility in relation to the data in (1). Then, I moved on to introducing the “Closed Vowel Shortening” through the use of the data in (2). I began by presenting the set of data, explained there being two possible underlying representations, and posited the require rules to fit the criteria. After this, I then provided a description of the requirements of onset, rime, nucleus, and coda in Yawelmani. All but the coda are obligatory in this language, and we see that through the data in (1). Finally, in order to derive the syllable structure, I applied the rule approach.