A METRICAL ANALYSIS OF THE LILLOOET STRESS SYSTEM

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1. INTRODUCTION

By applying Hayes' (1981) metrical theory of stress, this paper attempts to provide an analysis of the Lillooet stress system. Lillooet is a Northern Interior Salish language spoken in British Columbia. Previous work on the Lillooet language includes van Eijk (1985) which provides an extensive analysis and description of the stress system of Lillooet in the theoretical framework of classical structuralism, as well as Bates (1983) which provides a metrical account of Lillooet.

Extracting the relevant generalities and specifics from van Eijk's (1985) phonological approach and elaborating on and expanding from Bates' (1983) metrical analysis, this paper attempts to formulate a series of metrical rules which will reflect the nature of the stress system of Lillooet. Bates (1983) generates an analysis which postulates both a Main Stress Rule (MSR) and an Alternating Stress Rule (ASR). In Bates' analysis, the ASR generates only one distinct secondary stress, while this paper, based on van Eijk's (1985) assumption about the role of pre-tonic vowels, contends that those pre-tonic vowels which serve as the counting bases in the assignment of stress must all receive alternating secondary stress. By providing a series of verbal paradigms, this paper will illustrate a metrical analysis which will account for the alternations in the stress system of Lillooet.

2. BACKGROUND AND DESCRIPTION OF METRICAL PHONOLOGY

Extracting stress out of the distinctive feature matrices of standard generative phonology, Liberman and Prince (1977) proposed that stress should be presented as a matter of relative prominence among syllables. To represent this relativity, Liberman and Prince create a system of binary branching tree structures where each pair of sister nodes is labelled S W (strong or weak) or W S (weak or strong), depending on which node is stronger. The labelling of these structures, called feet, is constructed on the projection of the rime of a syllable and are grouped together into binary structures which make up a word tree. When all of the binary grouping and labelling is completed, the syllable which is exclusively dominated by S nodes is the strongest relative prominent syllable.

A set of metrical stress rules will construct a hierarchy of metrical trees, consisting of a foot level and a word level. The rules assigning stress can be iterative or non-iterative, and if iterative, the direction in which they apply may be variable. As well, the shape of the structures which are created may vary: that is, metrical structures may differ in the maximum that is placed on their size; or metrical structures may differ in whether they are right or left branching; or metrical structure may differ in the restrictions on what their terminal nodes may dominate; and metrical structures may differ in the procedures for labelling.

In Liberman and Prince's (1977) metrical stress theory, a syllable is called extrametrical if it is ignored by the stress rules; that is, it is treated as if it were not there. Hayes (1981) extends this notion further, arguing that languages may contain extrametricality rules which may apply to large segments of the lexicon-- that is, on the edges of stress domains, it is common for some classes of segments to be unable to be labelled with trees. These segments are accounted for by extrametricality rules which make these segments unavailable for foot construction, and any stray segments at the end of a derivation are attached as weak sisters to the word tree by a convention called Stray Syllable Adjunction.

Hayes asserts that an extrametricality rule has two claims:

a. that the material marked as extrametrical must always be a single, unvarying unit; and

b. that extrametricality is assigned only at the right edge of stress domains.

Hayes adds that there two sizes among unmarked trees; those that are maximally binary and those that are unbounded. This means that dominant nodes must be either terminal or free. Non-branching feet, also known as degenerate feet, are defined as maximally non-branching. A tree is considered quantity-sensitive if terminal nodes that branch under the appropriate projections are, in fact, counted as branching. A tree is considered quantity-insensitive if all terminal nodes are counted as non-branching. Hayes creates a convention which states that if a foot construction rule mentions a rime projection, then quantity-sensitive feet are constructed.

3. PREVIOUS WORK ON LILLOOET STRESS: VAN EIJK

Van Eijk (1985) provides an extensive analysis of Lillooet phonology. In his description of the stress system of Lillooet, van Eijk states that in polysyllabic words, only one syllable is stressed; that is, only one syllable has primary stress. Stress in Lillooet is mobile: it can move to a later syllable if suffixes and enclitics are added. Vital for the assignment of secondary stress in Lillooet are pre-tonic vowels which serve as the counting bases in this stress assignment. Van Eijk uses the term "syllabifier" for any vowel and for any consonant that functions as a syllable with regard to stress. This paper will follow van Eijk's analysis whereby full vowels refer to /a ạ i ị u ụ/ and are abbreviated A and weak vowels refer to /əə̣/ and are abbreviated E.

Van Eijk describes three types of rules which govern the movement of stress:

a. those that involve full vowels known as "full syllabifiers";

b. those that involve weak vowels and certain consonants known as "weak syllabifiers"; and

c. full vowels that always attract stress known as "strong syllabifiers."

3.1 Full Syllabifiers

Van Eijk describes those words with only full vowels as having the following stress movement when suffixes or enclitics are added: stress moves two vowels at a time from the originally stressed vowel, as long as it does not fall on the last one. Full syllabifiers can have a stress movement within a root, from a root to a suffix, or from a root to an enclitic.

3.2 Weak Syllabifiers

In words with only weak vowels, the stress falls, as a general rule, on the first vowel. Van Eijk points out that words consisting of more than two weak syllables are rare and therefore not suitable for generalizations. Words with both weak and full vowels, the weak vowels must be counted when assigning stress but, regardless, stress cannot fall on the weak vowel in this type of word. When weak vowels are in the position where full vowels would receive stress, they are, in fact, ignored. Consequently, van Eijk concludes that when there is more than one syllable after the weak vowel, the stress moves to the first of these syllables whereas when there is only one syllable after the weak vowel, the stress does not move.

Van Eijk points out that two groups of consonants function as weak vowels for stress purposes:

a. the second consonant in a root-or suffix-final cluster; and

b. lexical suffixes and enclitics of the shape C or CC.

Like weak vowels, these consonants have to be counted when assigning stress. When any of these consonants are in the same position where a full syllabifier would receive stress, they are ignored. To conclude, a weak syllabifier includes weak vowels and consonantal elements that behave like weak vowels.

3.3 Strong Syllabifiers

Van Eijk points out that strong syllabifiers (which are syllables consisting of full vowels), when in word-final position, tend to ignore the stress tendencies already noted and can be considered to be a marked set and, consequently, fall outside any generalities. Van Eijk considers strong syllabifiers to be found in the lexicon [for our purposes, the strong syllabifier classification is unimportant, since it is the quality of the vowel that is important for metrical phonology; so, in fact, strong syllabifiers can be classified with full syllabifiers].

Van Eijk (1981) formulates a general stress rule (p.88):

1. The counting base for the distribution of the stress is

   a. the (last) strong syllabifier in a word, or, if there is no strong syllabifier,

   b. the first full syllabifier, or, if there is no full syllablifier,

   c. the first weak syllabifier.

2. From this base the stress moves two syllabifiers at a time, as suffixes or enclitics are added, as long as

a. it does not fall on the last syllabifier in a word, except when the last syllabifier is also the only full syllabifier (here it may move also one syllable);

b. it does not fall on a weak syllabifier (where it would, the weak syllabifier is ignored).

4. PREVIOUS WORK ON LILLOOET STRESS: BATES

Bates (1983) is a metrical account of stress in Lillooet. Bates indicates that, as illustrated in a series of data sets, a final syllable which contains a schwa followed by a single consonant does not get main stress, while a full vowel (non-schwa) followed by one or more consonants does get main stress. To account for this, Bates proposes the following rules:

1. Extrametricality Rules

   a. Consonant Extrametricality (C-ex)

      i. C--> [+extrametrical]/___#

   b. Schwa Extrameticality (ə-ex)

      i. ə--> [+extrametrical]/___#

2. Main Stress Rule:

   a. On the rime projection form a binary, quantity-sensitive S W (left-dominant) foot.

As we have seen from Hayes' Tree theory, a quantity-sensitive foot prohibits a weak foot from dominating a branching rime; that is, a syllable which contains a diphthong or is closed with a consonant. Bates points out that the two extrametricality rules are in a feeding order with C-ex preceding ə -ex. Concurrent with extrametricality rules is Stray Syllable Adjunction which will adjoin the extrametrical constituents to the word tree.

To account for stresses to the left of the main stress, Bates creates an Alternating Stress Rule (ordered after the MSR):

3. Alternating Stress Rule

   a. Form quantity-insensitive, left-dominant binary feet across the rest of the word right to left.

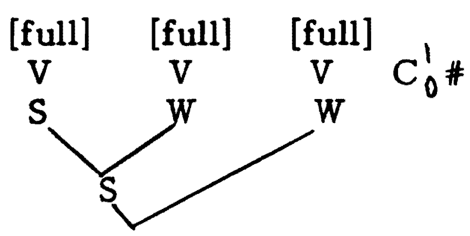
Bates, following from the metrical model, adds that when a rule builds quantity-sensitive binary feet (as does the MSR), if the conditions are not met to make a well-formed binary foot (that is, if the creation of such a foot results in W dominating a branching rime), a non-branching foot is formed over the final heavy syllable, and the ASR, if it applies, applies to the material to the left of the degenerate foot. Bates states that the strongest syllable of the word is the strong syllable of the strongest foot, and that secondary stresses are indicated by being the strong members of weaker feet.

Bates considers that the above rules present a general analysis of stress placement, and, to account for any penultimate anomalies, proposes the following general principle which holds for all foot construction by the MSR and the ASR, and can be considered a well-formedness constraint:

4. S may not dominate ə

Bates points out that with the extrametricality rules, one can predict that main stress should appear three syllables from the end of the word (that is, antepenultimate stress) provided that the final syllable is schwa plus one consonant. To account for another class of antepenultimate stress, Bates creates a special type of foot that can be formed by the MSR if particular segmental criteria are met. That is, if and only if the last three vowels are full (non-schwa), and the last syllable is closed by only one consonant, then a left-dominant <u>superfoot</u> is formed:

5. superfoot



Bates considers superfeet to be an option of the MSR, disjunctively ordered with the MSR. Finally, Bates postulates a right-dominant W S word tree.

5. A METRICAL ANALYSIS OF THE LILLOOET STRESS SYSTEM

From a review of van Eijk's (1988) descriptive work in verbal paradigms in Lillooet, as well as insights from both van Eijk's (1985) and Bates' (1983) analyses, three major generalizations can be drawn:

a) In Lillooet, primary stress must work its way from left to right (L-->R);

b) In analysing alternating secondary stress, the initial syllable plays an important role;

c) A default mechanism exists when a weak vowel occurs in the position where stress would normally occur.

The first generalization is drawn by noting the tendency of alternating secondary stress to fall, in all cases, on the initial syllable. From this point, secondary stress falls on every other syllable that follows. As no word final stress occurs in Lillooet (other than when forced by weak vowels in a default position), the last alternating syllable receives primary stress (hence, if there is an even number of syllables, primary stress will be penultimate, and if there an odd number of syllables, primary stress will be antepenultimate). It is, at this point, valid to make the assertion that this stress pattern is dependent on the amount of syllablic peaks or nuclei in a word.

The second generalization is drawn by noting that primary stress tends to fall in a position which facilitates (enough) secondary stress to have the alternating stress fall on the initial syllable. This is important as it establishes not only the role of secondary stress but also the fact that primary stress falls in a position of alternation regardless of penultimate or antepenultimate placement.

The third generalization is drawn by noting the predictable way stress moves when a weak vowel occurs in the position where stress would normally occur. Weak vowels can not accommodate stress in Lillooet. When a weak vowel occurs in the position where a full vowel would receive stress (either primary or secondary), the syllabic peak or nucleus is ignored (that is, if a five syllable word has a weak vowel occurring in antepenultimate position where a full vowel would receive primary stress, that syllable is ignored and the word is treated as if it were a four syllable word).

The above generalizations are based on the tendencies which have been noted in all cases in the following verbal paradigms (note that for representational purposes, C can equal C_0^1 [this is evidence which supports the assertion that it is the nucleus of the syllable which is instrumental (i.e. full versus weak vowels) as the numbers of consonants in the coda do not affect the placement of stress] and that Ind. = Indicative, Subj. = Subjunctive, Fact. = Factual, F./S. = Factual/Subjunctive, F./S./I. = Factual/Subjunctive/ Indicative, 1 = first person, 2 = second person, 3 = third person, S = Singular, P = Plural, cun- "to tell, order", cuɬ- "to point at", təq- "to touch something", and xʷitəns- "to whistle at"):

5.1 Verbal paradigms consisting of <u>only full vowels</u>:

(a) 2 syllable words = CÁCAC

cún-ɬk-an	1S-3S Ind.
cún-c-k-axʷ	2S-1S Ind.
cún-ɬk-axʷ	2S-3S Ind.
s-cún-cin	1S-2S Fact.
cún-an	1S-3S F./S.
cún-c-axʷ	2S-1S F./S.
cún-axʷ	2S-3S F./S.
cún-c-as	3S-1S F./S./I.
cún-as	3S-3SP F./S./I.

This data set of 2 syllable words (that is, an even number of syllables) exhibits penultimate stress.

(b) 3 syllable words = CÁCACAC

cún-ci(n)-ɬk-an	1S-2S Ind.
cún-wit-k-an	1S-3P Ind.
cún-wit-k-axʷ	2S-3P Ind.
cún-c-k-al̓ap	2P-1S Ind.
cún-ɬk-al̓ap	2P-3S Ind.
cún-cin-an	1S-2S Subj.
cún-wit-an	1S-3P F./S.
cún-wit-axʷ	2S-3P F./S.
cún-c-al̓ap	2P-1S F./S.
cún-al̓ap	2P-3S F./S.
cún-cih-as	3S-2S F./S./I.
cún-it-as	3P-3SP F./S./I.
cúɬ-un̓-ɬkan	1S-3S Ind.

cúł-uṅ-c-kaxʷ	2S-1S Ind.
cúł-uṅ-łkaxʷ	2S-3S Ind.
s-cúł-uṅ-cin	1S-2S Fact.
cúł-uṅ-an	1S-3S F./S.
cúł-uṅ-c-axʷ	2S-1S F./S.
cúł-uṅ-axʷ	2S-3S F./S.
cúł-uṅ-c-as	3S-1S F./S./I.
cúł-uṅ-as	3S-3SP F./S./I.

Here, antepenultimate primary stress occurs with an odd number of syllables.

(c) 4 syllable words = CÀCACÁCAC

cùn-tumúł-k-an	1S-2P Ind.
cùn-tan-í-łk-an	1S-3P Ind.
cùn-tumúł-k-axʷ	2S-1P Ind.
cùn-wit-k-ál̓ap	2P-3P Ind.
cùn-tumúł-an	1S-2P F./S.
cùn-tan-íh-an	1S-3P F./S.
cùn-tumúł-axʷ	2S-1P F./S.
cùn-wit-ál̓ap	2P-3P F./S.
cùn-tumúł-as	3S-1P F./S./I.
cùn-c-al-ít-as	3P-1S F./S./I.
cùn-cih-ás-wit	3P-2S F./S./I.
cùł-uṅ-cí(n)-łkan	1S-2S Ind.
cùł-uṅ-wít-kan	1S-3P Ind.
cùł-uṅ-wít-kaxʷ	2S-3P Ind.
cùł-uṅ-c-kál̓ap	2P-3S Ind.
cùł-uṅ-łkál̓ap	2P-3S Ind.
cùł-uṅ-cín-an	1S-2S Subj.
cùł-uṅ-wít-an	1S-3P F./S.
cùł-uṅ-wít-axʷ	2S-3P F./S.
cùł-uṅ-c-ál̓ap	2P-1S F./S.
cùł-uṅ-ál̓ap	2P-3S F./S.
cùł-uṅ-cíh-as	3S-2S F./S./I.
cùł-uṅ-ít-as	3P-2SP F./S./I.

All forms have penultimate primary stress with secondary stress falling on the the initial syllable; if it were antepenultimate stress, it would leave the initial syllable stressless but Lillooet exhibits a tendency for some degree of stress initially.

(d) 5 syllable words = CÀCACÁCACAC

cùn-tumúł-k-al̓ap	2P-1P Ind.
cùn-tumúł-al̓ap	2P-1P F./S.
cùn-tam-ál̓ap-as	3S-2P F./S./I.
cùn-tumúl-it-as	3P-1P F./S./I.
cùł-uṅ-túmuł-kan	1S-2P Ind.
cùł-uṅ-táni-łkan	1S-3P Ind.
cùł-uṅ-túmuł-kaxʷ	2S-1P Ind.
cùł-uṅ-wít-kal̓ap	2P-3P Ind.
cùł-uṅ-túmuł-an	1S-2P F./S.
cùł-uṅ-tánih-an	1S-3P F./S.
cùł-uṅ-túmuł-axʷ	2S-1P F./S.

cùɬ-uń-wít-al̓ap	2P-3P F./S.
cùɬ-uń-túmuɬ-as	3S-1P F./S./I.
cùɬ-uń-c-ál-it-as	3P-1S F./S./I.
cùɬ-uń-cíh-as-wit	3P-2S F./S./I.

All forms in this data set have antepenultimate primary stress with alternating secondary stress initially.

(e) 6 syllable words = CÀCACÀCACÁCAC

cùn-tam-àl̓ap-ás-wit	3P-2P F./S./I.
cùɬ-uń-tùmuɬ-kál̓ap	2P-1P Ind.
cùɬ-uń-tùmuɬ-ál̓ap	2P-1P F./S.
cùɬ-uń-tùmul-ít-as	3P-1P F./S./I.

These forms have penultimate primary stress with alternating secondary stress initially: there is one exception, cùɬ-uń-tam-ál̓ap-as ("to point at" 3S-2P Fact.); but van Eijk (1988) points out that the suffix -tam has zero stress strength. If one ignores this suffix (i.e. syllable) when it appears (for the purpose of this paper, only when it appears in the position to attract stress [i.e. the designate terminal element of a S node]), it follows the stress pattern for a five syllable word (c.f. cùn-tam-àl̓ap-ás-wit ["to tell, order" 3P-2P Fact.], here -tam is not in the position to affect stress and, consequently, this word follows the predicted stress pattern for a six syllable word).

(f) 7 syllable words = CÀCACÀCACÁCACAC

The only seven-syllable example, here, contains the -tam suffix (cùɬ-uń-tam-àl̓ap-ás-wit "to point at" 3P-2P Fact.) in a position where stress would fall; accordingly, it is ignored and thus follows the stress pattern of a six syllable word.

5.2 Verbal paradigms consisting both full and weak vowels:

(a) 2 syllable words = CECÁC

s-təq-(n)án	1S-3S Fact.
təq-n-áxʷ	2S-3S F./S.
təq-n-ás	3S-3SP F./S./I.

Final stress occurs in this set of examples because the initial vowels are weak; hence, the vowels cannot attract stress.

(b) 3 syllable words

i) CECECÁC

təq-ən-ɬkán	1S-3S Ind.
təq-ən-c-káxʷ	2S-1S Ind.
təq-ən-ɬkáxʷ	2S-3S Ind.
təq-ən-c-áxʷ	2S-1S F./S.
təq-ən-c-ás	3S-1S Fact.

Final stress occurs in this data set because the weak vowels fall in a position where stress is predicted to occur; accordingly, stress must fall on the first strong vowel.

ii) CECÁCAC

təq-n-ál̓ap	2P-1S F./S.
təq-n-ít-as	3P-3SP F./S./I.

Penultimate stress falls on the leftmost strong vowel; this is evidence for the generalization that there is a tendency to move toward some degree of initial stress.

iii) CÁCECAC

xʷítəns-k-an	1S-3S Ind.
xʷítəns-k-axʷ	2S-3S Ind.
xʷítəns-an	1S-3S F./S.
xʷítəns-axʷ	2S-3S F./S.
xʷítəns-as	3S-3SP F./S./I.

Antepenultimate stress occurs in this set. The weak vowels do not occur in a position to affect stress, consequently these examples follow the stress pattern of 3 syllable words consisting of all strong vowels.

(c) 4 syllable words

i) CECECÁCAC

təq-ən-cí(n)-łkan	1S-2S Ind.
təq-ən-wít-kan	1S-3P Ind.
təq-ən-wít-kaxʷ	2S-3P Ind.
təq-ən-c-kál̓ap	2P-1S Ind.
təq-ən-łkál̓ap	2P-3S Ind.
təq-ən-cín-an	1S-2S Subj.
təq-ən-cín-an	1S-3S F./S.
təq-ən-wít-an	1S-3P F./S.
təq-ən-wít-axʷ	2S-3P F./S.
təq-ən-c-ál̓ap	2P-1S F./S.
təq-ən-cíh-as	3S-2S Fact.

Penultimate primary stress occurs in a similar manner to the examples of 4 syllable words with full vowels, except that in this data set the inherent inability of weak vowels to accept stress is displayed, as no initial secondary stress occurs.

ii) CÀCECÁCAC

xʷìtəns-wít-k-an	1S-3P Ind.
xʷìtəns-túmx-k-axʷ	2S-1S Ind.
xʷìtəns-wít-k-axʷ	2S-3P Ind.
xʷìtəns-ál̓ap	2P-3S Ind.
s-xʷìtəns-túmin	1S-2S Fact.
xʷìtəns-wít-an	1S-3P F./S.
xʷìtəns-túmx-axʷ	2S-1S F./S.
xʷìtəns-wít-axʷ	2S-3P F./S.
xʷìtəns-al̓ap	2P-3S F./S.
xʷìtəns-túmx-as	3S-1S Fact.
xʷìtəns-twít-as	3P-3SP Fact.

Penultimate primary stress and alternating secondary stress occurs in this data set, following the pattern of stress of 4 syllable words with full vowels; note that, here, the weak vowels do not occur in a position where they could affect stress.

(d) 5 syllable words

i) CECECÁCACAC

təq-ən-túmuɬ-kan	1S-2P Ind.
təq-ən-táni-ɬkan	1S-3P Ind.
təq-ən-túmuɬ-kaxʷ	2S-1P Ind.
təq-ən-wít-kal̓ap	2P-3P Ind.
təq-ən-túmuɬ-an	1S-2P F./S.
təq-ən-tánih-an	1S-3P F./S.
təq-ən-túmuɬ-axʷ	2S-1P F./S.
təq-ən-wít-al̓ap	2P-3P F./S.
təq-ən-túmuɬ-as	3S-1P Fact.
təq-ən-c-ál-it-as	3P-1S Fact.
təq-ən-cíh-as-wit	3P-2S Fact.

Antepenultimate primary stress occurs in this set but there is no initial secondary alternating stress because of the weak vowel placement.

ii) CÀCECÁCACAC

xʷìtəns-túmi(n)-ɬk-an	1S-2S Ind.
xʷìtəns-túmuɬ-k-an	1S-2P Ind.
xʷìtəns-táni-ɬk-an	1S-3P Ind.
xʷìtəns-túmuɬ-k-axʷ	2S-1P Ind.
xʷìtəns-túmx-k-al̓ap	2P-1S Ind.
xʷìtəns-wít-k-al̓ap	2P-3P Ind.
xʷìtəns-túmin-an	1S-2S Subj.
xʷìtəns-túmuɬ-an	1S-2P F./S.
xʷìtəns-tán-ih-an	1S-3P F./S.
xʷìtəns-túmuɬ-axʷ	2S-1P F./S.
xʷìtəns-túmx-al̓ap	2P-1S F./S.
xʷìtəns-wít-al̓ap	2P-3P F./S.
xʷìtəns-túmih-as	3S-2S Fact.
xʷìtəns-túmuɬ-as	3S-1P Fact.

Antepenultimate primary stress and alternating secondary stress occurs in this data set; here, again, the weak vowels are not in a position to affect stress.

(e) 6 syllable words

i) CÀCECÀCACÁCAC

xʷìtəns-tùmuɬ-k-ál̓ap	2P-1P Ind.
xʷìtəns-tùmuɬ-ál̓ap	2P-1S P./S.
xʷìtəns-tùmx-al-ít-as	3P-1S Fact.
xʷìtəns-tùmih-ás-wit	3P-2S Fact.
xʷìtəns-tùmul-ít-as	3P-1P Fact.

In this data set penultimate primary stress and alternating secondary stress occur: an exception is xʷìtəns-tam-ál̓ap-as ["to whistle at" 3S-2P Fact.] but here, again, the -tam suffix, which has no counting value and is in a position to attract stress, is ignored, and the example follows the stress pattern of a five syllable word.

ii) CECECÀCACÁCAC

təq-ən-tùmuɬ-kál̓ap	2P-1P Ind.
təq-ən-tùmuɬ-ál̓ap	2P-1P F./S.
təq-ən-tùmul-ít-as	3P-1P Fact.

Penultimate primary stress and alternating secondary stress occur where applicable; an exception is təq-ən-tam-ál̓ap-as ["to touch something" 3S-1S Fact.] but again the -tam suffix, which has no counting value and is in a position to attract stress, is ignored and the word follows the stress pattern of a five syllable word.

(f) 7 syllable words

i) CECECACÀCACÁCAC

təq-ən-tam-àl̓ap-ás-wit	3P-2P Fact.

ii) CÀCECACÀCACÁCAC

xʷìtəns-tam-àl̓ap-ás-wit	3P-2P Fact.

These two examples contain -tam suffixes which are in a position to affect stress; consequently, the -tam suffixes are ignored and these examples follow a six syllable stress pattern.

The point to be drawn here is that a nucleus projection of vowel quality is vital. Once vowel quality has been established, metrical rules can be constructed to account for the stress tendencies outlined above: that is, the alternating nature of Lillooet stress, some degree of stress initially, no (or default) stress finally, and the inability of weak vowels to accept stress (other than by default).

This paper contends that the following rules will serve as a predictable metrical analysis of Lillooet stress:

1. On the nucleus projection, project the quality of the vowel (A or E),

2. If A:

   a. going from L-->R, construct binary, quantity-sensitive, left-dominant feet (Main Stress Rule [MSR]);

   b. when binary trees can no longer be created, remove feet that do not branch by a final foot destressing rule [FFD]:

      i. $F \longrightarrow 0 / \underset{|}{\underline{\overset{\omega}{|}}}\,]word$

   c. make a right-dominant word tree;

d. Stray syllable adjunction [SSA]: adjoin a stray syllable as a weak member of an adjacent foot.

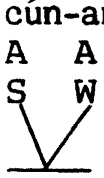
3. If an E is projected in a position where an A would take stress [i.e. if, in a binary tree S W, E is in the S node position], create a degenerate foot (hence W) which is removed from the foot structure; otherwise, a weak-positioned E can act as like a weak-positioned A ([DF]= degenerate feet).

4. If only one strong vowel is projected, that vowel must have a strong non-branching foot.

The following derivations will illustrate the working mechanisms of these metrical rules. Because of the predictable nature of the stress in the data sets, it is necessary to take only one or two examples for each syllable sets:

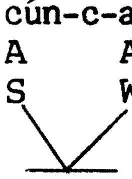
A. 2 syllable words

cún-an ("to tell, order" 1S-3S F./S.)



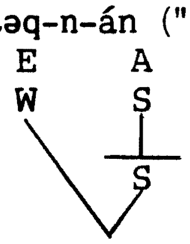
Nucleus projection (NP)
Main Stress Rule (MSR)
Word Tree

cún-c-ax^w ("to tell, order" 2S-1S F./S.)



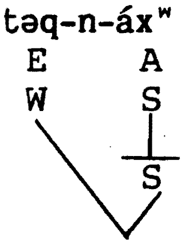
NP
MSR
Word Tree

s-təq-n-án ("to touch something" 1S-2S Fact.)



NP
DF
Word Tree
Stray Syllable Adjunction (SSA)

təq-n-áx^w ("to touch something" 2S-3S F.S.)

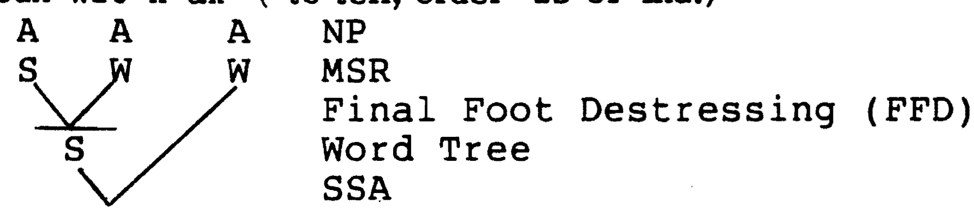


NP
DF
Word Tree
SSA

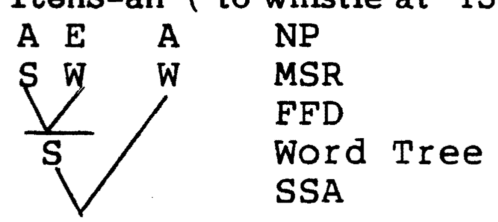
These examples illustrate the necessity of Rule 4 (If only one strong vowel is projected, that vowel must have a strong non-branching foot). These examples also show that it will be necessary to have a final foot destressing rule instead of an extrametricality rule because, in certain cases, it is necessary to have a final strong foot. If an extrametricality rule were in place, it would not be able to account for these final strong feet.

B. 3 syllable words

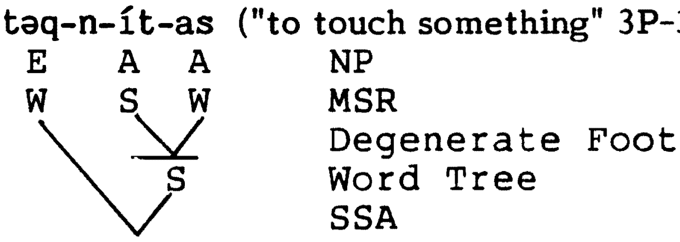
cún-wit-k-ax^{w} ("to tell, order" 2S-3P Ind.)



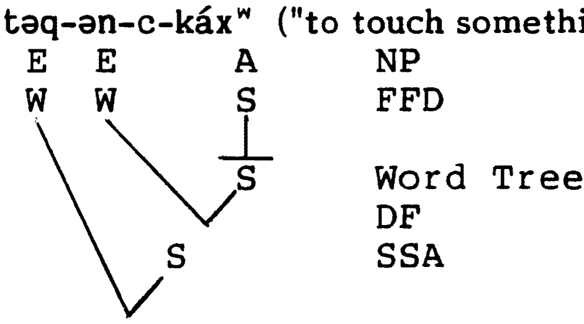
x^{w}ítəns-an ("to whistle at" 1S-3S F./S.)



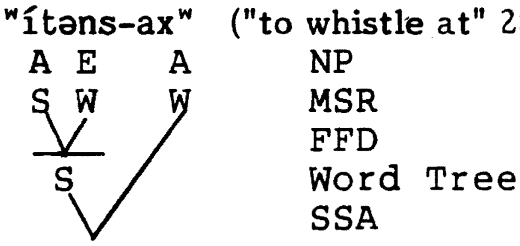
təq-n-ít-as ("to touch something" 3P-3SP F./S./I.)



təq-ən-c-káx^{w} ("to touch something" 2S-1S Ind.)

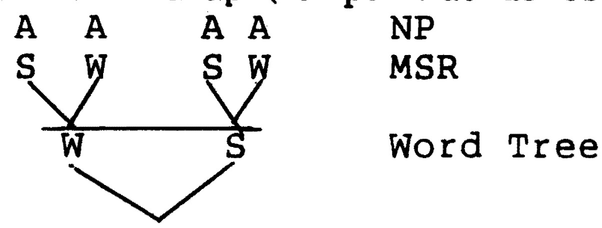


x^{w}ítəns-ax^{w} ("to whistle at" 2S-3S F./S.)

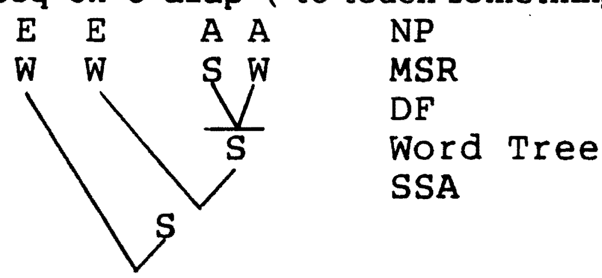


C. <u>4 syllable words</u>

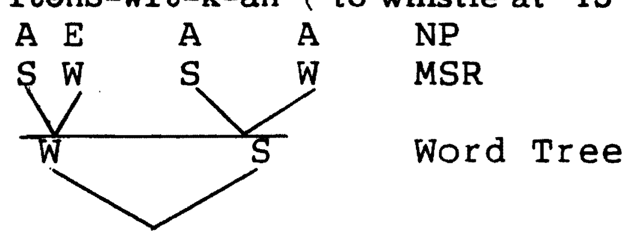
cùɬ-uṅ-ɬkál̓ap ("to point at" 2P-3S Ind.)



təq-ən-c-ál̓ap ("to touch something" 2P-1S Ind.)

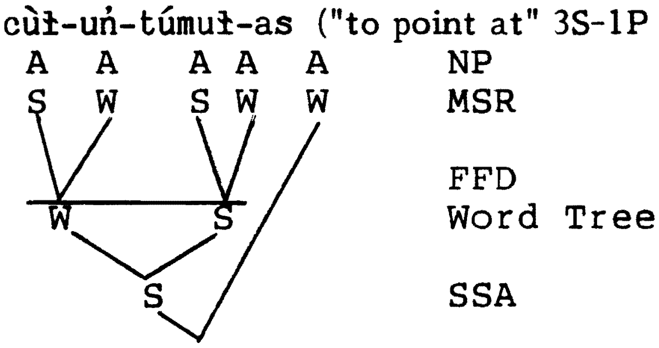


xʷìtəns-wít-k-an ("to whistle at" 1S-3P Ind.)

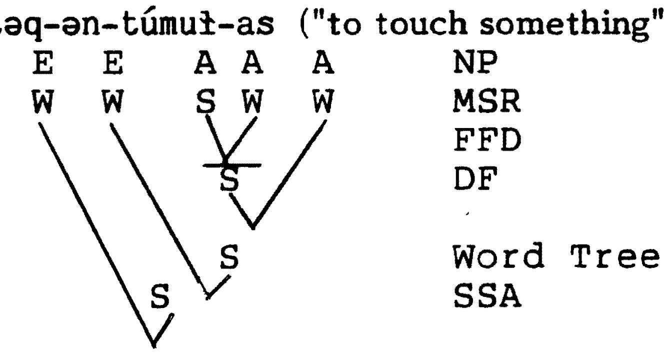


D. <u>5 syllable words</u>

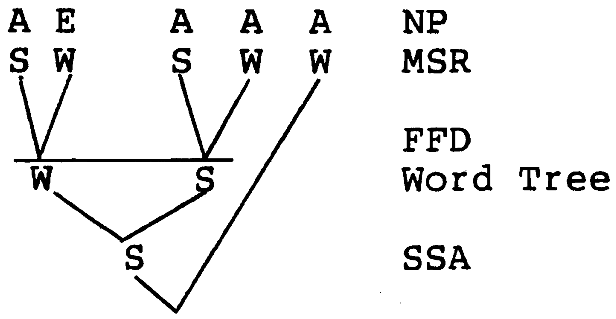
cùɬ-uṅ-túmuɬ-as ("to point at" 3S-1P Fact.)



təq-ən-túmuɬ-as ("to touch something" 3S-1P F./S.I.)

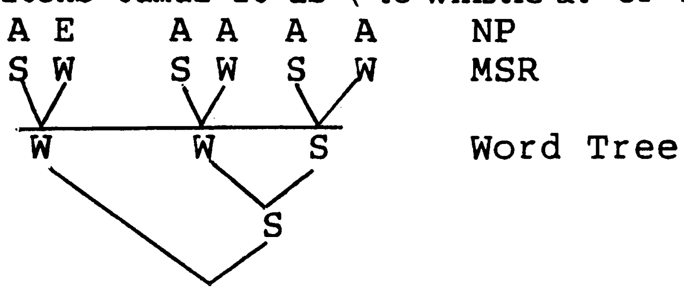


xʷìtəns-tə́n-ih-an ("to whistle at" 1S-3P F./S.)

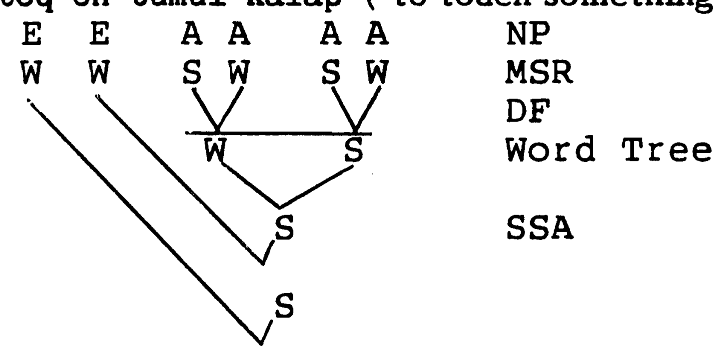


E. <u>6 syllable words</u>

xʷìtəns-tùmul-ít-as ("to whistle at" 3P-1P F./S.I.)



təq-ən-tùmuɬ-kálʼap ("to touch something" 2P-1P Ind.)



6. EXCEPTIONS, SHORTCOMINGS, AND DISCLAIMERS

It is at this point that it must be noted that this paper is, as yet, an introductory, exploratory analysis of Lillooet stress. The research in this paper is based on a set of four verbal paradigms (174 pieces of information) which have exhibited a relatively high degree of predictability. Although the data in this paper provide compelling evidence for the proposed analysis, it may be shown that, in a further analysis of a larger set of data, these metrical rules may not account for all cases.

7. CONCLUSION

The major conclusion drawn from this research is that, in Lillooet, it is the nucleus of a syllable that is vital to the placement of stress. Nucleus projections, which are the formal apparatus for accounting for strong and weak vowels, while indicating the alternating nature of Lillooet stress, also indicate the inherent inability of weak vowels to accept stress. This inability results in default mechanisms when a weak vowel occurs in the position where stress would normally fall.

Having abandoned an extrametrical analysis in favour of a final foot destressing rule to account for final, strong, non-branching feet, it becomes apparent that the inability of weak vowels to accept stress plays an important role. An examination of the stress patterns for the varying syllable lengths provides for three conclusions: (1) primary stress moves from left to right; (2) when analysing secondary stress, the initial syllable plays an important role; and (3) a default mechanism occurs when a weak vowel occurs in the position where stress would normally fall. A projection from these conclusions is that a metrical analysis can account for this remarkably complicated stress system with just a few rules and that these rules share many properties with stress in other languages, even though the surface facts may appear quite different. These conclusions coupled with metrical theory can provide a relatively simple analysis of stress in Lillooet.

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