

## TSIMSHIANIC STRESS ASSIGNMENT AND THE WORDS FOR 'MEAT, BEAR'

Marie-Lucie Tarpent  
Mount Saint Vincent University  
Halifax, N.S. Canada

0. **Abstract:** In the Tsimshianic languages, stress is usually on the root, which generally falls on the last syllable of the word, but a number of exceptions point to an earlier pattern of stress on the penultimate syllable, regardless of its morphological status. The evolution of the stress pattern is a crucial element in the history of these languages. The consequences of the penultimate stress rule have obscured the derivation of a number of words which are no longer analyzable in synchronic terms, and have also led ultimately to the present rules. It can also be shown that the penultimate stress-rule survived longer as a productive process in Maritime Tsimshianic (MT--Coast and Southern Tsimshian) than in Interior Tsimshianic (IT--Nisgha and Gitksan).

Together with already established rules, and a knowledge of root-structure, awareness of the earlier stress-pattern helps to solve etymological puzzles. Particularly interesting is the origin of the words for 'meat, bear' (N, G *smax*, ST *smax* CT *smi*), which can be traced to a bimorphemic original meaning 'best-meat'.

1. **Tsimshianic morphological structure and stress patterns:** Tsimshianic morphological structure is most clearly displayed in Nisgha, compared to which the other languages show more or less erosion of non-initial, especially final consonants (Tarpent (T) 1983b, 1992).<sup>1</sup> On the other hand, N vocalism is the simplest, often as the result of mergers while CT and especially ST vocalism preserve many contrasts (T 1990a, 1992). Nevertheless, some general principles apply to all members of the family, and must therefore have been part of the structure of the proto-language.

Most Tsimshianic words consist at least of a CVC root, to which may be added a number of affixes. The existence of root pairs with the same consonants but different vowels, and sharing some semantic features, show that the proto-language had an infix, tentatively indicated by H because of its centralizing or lengthening influence in many cases, which had imperfective meaning (T 1990a). Thus root-roots can be reconstructed as \*CVC or \*CVHC. Plural forms, usually of verbs, are built either by prefixation, or more often, by reduplication, the latter either full (CVC)CVC or partial (CVCVC) (T 1983b). Compounding is also a very widespread phenomenon.

In the present languages, stress is usually on the root, or on a stressed suffix. However, many currently exceptional and irregular forms can only be explained by an earlier pattern of stress on the penultimate syllable, regardless of its morphological status (T 1983b, 1990c). In both current and older forms, stress affects the quality and even the presence of vowels.

1.1. **Roots and affixes:**

1.1.2. **Stress on the root or final syllable:** The following are typical examples of easily analyzable derivations:

√\*mes > √mas 'red, reddish':<sup>2</sup>

- |                                  |                         |
|----------------------------------|-------------------------|
| (1) N <i>másk<sup>W</sup></i>    | 'to be red(dish-brown)' |
| mas-[t]k <sup>W</sup> red-Medial | N <i>maskv</i>          |
| (2) N <i>misó?</i>               | 'sockeye salmon'        |
| *mes-ó? red-?                    | N <i>miso</i>           |

√tám 'to draw, to make designs,' hence 'to write':

- |  |                                    |
|--|------------------------------------|
| (3) N <i>k<sup>W</sup>ilksqaltám<sup>W</sup></i>         | 'picture, photograph'              |
| k <sup>W</sup> ilks-tqal-tám-t <sup>W</sup>              | (lit. 'writes itself')             |
| back-against-write-Medial (back-...-Medial - Reflexive)  | N <i>gwilksq'altám<sup>W</sup></i> |
| (4) N <i>timísT</i>                                      | 'to write, writing'                |
| tám-ísT (stress on detransitive suffix -ísT <sup>3</sup> | N <i>timis(t)</i>                  |
| causing weakening of the root vowel a to i)              |                                    |
| (5) N <i>yu:timísk<sup>W</sup></i>                       | 'to act as secretary'              |
| yu:-timísT-[t]k <sup>W</sup>                             | N <i>yut'imiskv</i>                |
| (yu:---[t]k <sup>W</sup> - 'to be in charge of ...')     |                                    |

√Pé:n 'to paint' (<Eng. 'paint'):<sup>4</sup>

- |                             |                   |
|-----------------------------|-------------------|
| (6) N <i>Pé:ñisT</i>        | 'to paint'        |
| Pé:n-?sT paint-Def.AntiPASS | N <i>peñis(t)</i> |

1.1.2. **Archaic stress on the prefix or penultimate vowel:** instances of this pattern are rare, but the following forms demonstrate its earlier existence.

1.1.2.1. **'Grandfather of ...':** In all the languages, many chiefly names start with a prefix glossed as 'Grandfather of ...' which can be related to the current regular

formation of this expression by assuming a stress-shift (cf. 1983b). The N prefix is:

(7) N niýs... N Niýs...

while the normal way of saying 'grandfather of X' is

(8) N niyé?S X. N niye'esX

In the N word for 'grandfather', niyé? niye'e, the first element is the prefix nḡ- ni.../na... which is frozen in IT on a few kinship terms but corresponds to an MT particle na(h) which indicates possession,<sup>5</sup> it is followed by the term of address for 'Grandfather', yé? Ye'e! The connective =S which is incorporated in the naming prefix niýS- indicates that the following word is a proper name. The older form which gave rise to the naming prefix can be reconstructed as:

\*néHh-\*yeh?-s...  
alienated Poss-Grandfatherl-connective<sup>7</sup>

with loss of the post-sonorant vowel and consequent merger of the y and ? into the glottalized ʔ of the naming prefix: néHh-yeh?-s > niý?s > niýs-.

#### 1.1.2.2. The word for 'four':

(9) N, G txálpX CT, ST txá:lpX  
N, G txálpX.  
CT, ST txálpX<sup>8</sup>

This was probably originally a descriptive word referring to a four-sided structure such as a bentwood box (T 1983a). The initial element is the prefix txá:- 'all, altogether' and the following sequence /lp/ recalls the stem N líp-, CT, ST luup- 'to sew', perhaps originally 'to join, assemble.' The vocalic element of the proto-form for this second element has not yet been definitely established, but it can be left undetermined in the tentative reconstruction

txá:-\*l- p-x 'all-sewn/assembled-SUFF'<sup>9</sup>

12. Plural-formation: Plural-formation is an extremely important process in the Tsimshianic languages, comparable to past-formation in English in its syntactic

importance and morphological complexity. The study of plural-formation is especially important for internal and comparative reconstruction since the obvious relationship between singular and plural forms, even when the latter are highly irregular, is a guide to morphophonemic rules both synchronic and diachronic (T 1983b).

Most plural forms are built on verbal roots or stems. In IT, only a few nouns have distinct plurals, though a number of them have a typically plural reduplicated shape.<sup>10</sup> In CT, most nouns have plurals, of a shape which is demonstrably recent (1.2.2.1.2.). Plurality is signalled by prefixation or more commonly, by reduplication. Even the most complex irregular forms can be traced to one or the other (sometimes both, through reformation at different times) of these two basically simple processes.

1.2.1. Prefixation: This method applies only to a fairly small number of verbal stems, usually intransitives. It indicates that the same action is performed by a number of individuals.

1.2.1.1. Stress on the root: the root is prefixed with lḡ- (with vowel adjustment), often in combination with the suffix -T.<sup>6</sup>

(10) N liʔáksT pl. of ʔáks 'to drink'  
lḡ-ʔáks-T [PL.pfx-water/drink-sfx] N li'aks(t) pl. of aks

If the word includes a prefix, this prefix precedes the plural + root combination:

(11) N ʔaliskíT pl. of ʔaskí 'to be strange, abnormal, ugly'  
ʔa-[lḡ-skí-T] PFX-[PL.pfx-be/lie-sfx] N aliskit pl. of asgi

1.2.1.2. Archaic stress on the penultimate: a few prefixed plurals have stress on the prefix, with weakening or even deletion of the unstressed syllable. The older form of the plural prefix can be reconstructed as \*léHh-:

(12) N lískit pl. of skát (cf. (11)) 'to be born'  
reconstructed pl. \*léHh-sket-[T] N lískit pl. of sgat

(13) N *limqsT* 'to grow (pl.)'  
reconstructed pl. \**léHh-maqs-T* N *limqs(t)*

In (13) the singular stem (attested in other morphemes but no longer used with this meaning) is \**maqs maqs*, from the root  $\sqrt{\text{maq maq}}$  'put/placed' (cf. N *má:kS maaks* (45)). Deletion of the unstressed vowel is due to its position after a sonorant. Original  $\acute{E}H$  corresponds to N short *i*, but to long *i:* in MT, thus the corresponding CT, ST  $\acute{I}I:M\acute{X}S$  'to grow (pl.)' *limqs*.

(14) ST *k<sup>W</sup>li:dix* pl. of *k<sup>W</sup>dáx* 'to be hungry'  
reconstructed plural \**k<sup>W</sup>-léHh-tex* ST *k<sup>W</sup>liidix* pl. of *k<sup>W</sup>dax*

Here the two forms have in common the old prefix *k<sup>W</sup>-* and the original root  $\sqrt{*tex}$  having to do with food; the plural prefix immediately precedes the root (cf. (11)). (The same prefix-root combination has the same meaning but a different plural in N, see (29)).

1.2.2. **Reduplication:** Full reduplication, the most common method of verbal plural-formation, includes the entire CVC root, which is prefixed to itself, often with some phonological changes in the prefixed reduplicating syllable. Partial reduplication only involves the initial consonant.

1.3.2.1. **Full reduplication:** The meaning of this type of reduplication is 'repetition of the action.' The entire CVC (from original \*CVC or \*CVHC) root is reduplicated, and prefixed to itself. Most forms are stressed on the root, but one group of plurals which at first sight appear to be of a different type, can be explained by the consequences of an earlier pattern of stress on the reduplicating syllable. It is possible to identify three periods of the language according to the three basic forms taken by full reduplication, called respectively 'Early', 'Classical' and 'Modern' (T 1983b).

#### 1.2.2.1.1. Stress on the root:

1.2.2.1.1.1. **Classical:** This is the typical form of full reduplication. Most verbal plurals fall into this category. As a result of stress on the root, which comes second, the vowel of the first, reduplicating syllable is weakened, and can be predicted from the consonantal environment. In some cases the C2 of the reduplicated root is weakened: a glottalized consonant is deglottalized, a Velar stop is spirantized. The general formula for this type is:

SG - CVC, PL - Cvc)CVC (c - possibly weakened C2, v - predictable vowel)

a. C2 ≠ Velar: (15) N *cimcám* pl. of *cám* 'to boil, cook s.t.'  
\**cam)cám* > *cimcám* N *jimjam*, pl. of *jam*

(16) N *tipilpálT* pl. of *tipálT* 'to rub, massage s.t.'  
\**tə-pal)pál-T* > *tipil)pál-T*<sup>7</sup> N *hlibilba-di*, pl. of *hlibal-di*

b. Spirantization occurs if C2 is a Velar: SG - CVK, PL - CvX)CVK<sup>12</sup>

(17) N *caxcóq* pl. of *cóq* 'to stay, camp, live (s.w.)'  
\**coq)cóq* > *caxcóq* N *jaxjok*, pl. of *jok*

(18) N *tixták* pl. of *ták* 'to forget s.t.'  
\**tax)ták* > *tix)ták* N *t'ix't'ak*, pl. of *t'ak*

1.2.2.1.2. **Modern:** A more recent form of reduplication, which can be called 'modified full reduplication,' and derives ultimately from an extension of the reduplication of roots with final Velars, involves prefixation with IT CIX), MT CVK), CAX), where C is the C1 of the entire word.<sup>13</sup> Many nouns have a modern plural formed in this manner, especially in CT (cf. below 1.2.2.2.).

(19) CT *bik)bó:t* pl. of *bó:t* 'boat(s) (Eng. loan)  
CT *bikboot* pl. of *boot*

(20) N *six)sqaci:pa?* pl. of *sqaci:pa?* 'tie(s)'  
*six)sqaci:p-a?* (PL)across-tie-DETR N *sixsgats'iip'a'a*  
pl. of *sgats'iip'a'a*

This most recent form of reduplication is often added to already plural but more archaic verb forms (cf. (30), (31)).

1.2.2.1.2. **Archaic ('Early') stress on the reduplicated syllable:** One group of plurals appears at first sight to be a special class. This group is formed exclusively on CVK roots (where K - any Velar, stop or fricative, including ?). The formula is

## SG - CVK, PL - CV:CVK

(compare with the classical formula for these roots in 1.2.2.1.1.b., PL - CVXCVK). The stress is on the first, long vowel, which is usually the long counterpart of the short vowel of the singular; the second vowel is predictable from the final consonant (it is a before a uvular, u before a labiovelar, otherwise i):

- (21) N lá:laq pl. of lálq 'to move in water  
(e.g. beaver, fish)  
N *laalq* pl. of *laq*
- (22) N nó:nax pl. of nóx 'mother'  
N *noonax* pl. of *nox*

Such plurals can be reconstructed as originally fully reduplicated plurals \*CVK)CVK with stress on the first element, with the long vowel corresponding to the previous VK sequence after (spirantization and) weakening of the Velar:<sup>14</sup> e.g. for (21):

\*láq)laq > lálx)laq > lálhlaq > lá:lq > lá:laq<sup>15</sup>

Here again, any affixes stay outside the reduplicating pattern:

- (23) N kslá:taqsT pl. of kslálqsT 'to kick s.'  
(root √\*taq preceded by prefix ks-; N *kslaahlaks-di*  
reconstructed pl. \*ks-táq)taq-s-T > kslá:taqs-T<sup>16</sup> pl. of *kslaks-di*

This pattern, still fairly clear in IT, also existed in MT, as evidenced for instance by:

- (24) CT sá:sax pl. of sálx 'to be sharp'  
(root √\*saq; cf. N sáq 'id.' CT *suasax*  
reconstructed plural \*sáq)sax pl. of *sax*
- (25) ST xba:bax pl. of xbalx 'to be folded, creased'  
(root √\*paq preceded by old prefix x- < \*q-; ST *xbaabax*  
reconstructed plural \*q-páq)paq pl. of *xbaq*

That this class perpetuates an archaic pattern is shown also by further irregularities.

1.2.2.1.2.1. Phonological irregularities: (these are regular within this group of forms, though irregular from the point of view of classical full reduplication).

a. the stem vowel in the plural may be different from that in the singular (this occurs with roots with reconstructed \*e vowel):

- (26) N plí:tixsk<sup>W</sup> pl. of pláksk<sup>W</sup> 'to be tired'  
(root √\*tek preceded by old prefix p-; N *plihlitskw*  
reconstructed plural p-ték)tek-sk<sup>W</sup> pl. of *plakskw*

The present difference in the vowels of the singular and the plural is due to a different evolution of long and short stressed vowels: all \*é > á, N.G \*é: > í: (T 1983b). Cf. also (29), (32), (37).

b. there may be further consonantal changes at the boundary of the two syllables, or at the end of the word (this occurs when there is contact between Velar and glottal or glottalized consonants):

- (24) N qó:ʔx-T pl. of qóq-T 'to pull s.l. out'  
\*qóq)qoq > qóhʔoq > qó:ʔx N *k'oo'ox-di*  
pl. of *k'ok-di*

- (25) ST yáʔyx pl. of yálx 'to be hanging'  
(root √\*yaq \*yáq)yaq > yáhʔyx > yáʔyx ST *yax* pl. of *yax*

1.2.2.1.2.2. Morphological irregularities: an extra plural morpheme (prefix or reduplicated syllable) may be added to an already plural form, especially one which has become phonologically remote from the singular and no longer 'sounds like a plural':

- a. (29) N lux<sup>W</sup>ti:tix pl. of x<sup>W</sup>tálx 'to be hungry'  
(root √\*tex; compare (14) above; N *luxwidiix*  
reconstructed orig. plural \*k<sup>W</sup>-télx)tex pl. of *xwdax*

Here the plural prefix lə- (cf. 1.2.1.) is added to an already plural form \*x<sup>W</sup>ti:tix

built by reduplication of the CVK root; the vowel of the new prefix adjusts to the following consonant in a predictable manner.

- b. (30) ST  $\dot{n}ik\dot{n}u:nk$  pl. of  $\dot{n}ak$  'to be long'  
 (roots: pl.  $\sqrt{*}\dot{n}ek^W$ , sg.  $\sqrt{*}\dot{n}ek^W$ ; 17 ST  $\dot{n}ik'nuuk$   
 reconstructed orig. plural  $*\dot{n}ek^W$ )  $*\dot{n}ek^W$  pl. of  $\dot{n}ak$

Here modified full reduplication has been added to an already reduplicated but archaic plural form  $*\dot{n}u:nk$  (cf. the N equivalent, (37)). The stressed long vowel  $\dot{u}$ : is normal for ST reflexes of roots of the shape  $\sqrt{*}Cek^W$ .

1.2.2.1.2.3. Semantic irregularities: Sometimes the singular and plural forms of the same original word have acquired distinctive meanings.

- (31) CT  $saxsá:sax$  pl. of  $sáx$  'thorns' (lit. sharp  
 (root  $\sqrt{*}saq$  'sharp' (cf. (24); ones') CT  $saxsax$   
 reconstructed orig. plural  $*sáq$ )\* $saq$ )

Here a modern  $CaX$ - plural (1.2.1.1.2.) has been added to an original plural  $Sá:Sax$  still used for the verbal meaning (24), to indicate a specific nominal meaning.

The semantic divergence between plural and singular forms based on the same root is most striking in the following case:

- (32) N  $\eta i: ?ux^W.T$ ,  $\eta áx^W.T$  N  $ii'uxwt$  'men, boys'  
 reconstructed orig. plural  $*\eta ex^W$   $\eta ex^W-T$   $axwt$  'porcupine'  
 root  $\sqrt{*}\eta ex^W$  prob. meaning 'sharp weapon' (?),  
 suff.  $-T$  (here) '-ed'

Here the morphophonemic correspondence between the two forms points to a common ancestry. The common meaning 'armed' applies both to 'porcupine' and to 'warriors', hence the present meaning 'men, boys' of the plural form (T 1983b).

This interpretation is valid also for CT where  $\eta \acute{u}:ta$  'man, boy'  $\eta uuts$ , a former plural corresponding to N  $\eta i: ?ux^W.T$  'men, boys'  $ii'uxwt$ , is now a singular with a new, modern plural  $\eta ik)\eta \acute{u}:ta$  'men, boys'  $\eta ik'\eta uuts$  (1.2.1.1.2.). However, the ST equivalents of the N forms are singular  $\eta áx^Wt$  'man, boy'  $\eta axwt$ , pl.  $\eta i: ?ux^Wt$

$\eta uuts$ . The latter corresponds regularly to the N plural  $\eta i: ?ux^W.T$   $ii'uxwt$ . The S singular  $\eta áx^Wt$  'man'  $\eta axwt$  which contrasts with  $\eta áx^Wt$  'porcupine'  $axwt$  (identical to the N form) is probably a back-formation adding the initial  $\eta$  of the new plural form to the original singular, in order to differentiate the meanings 'porcupine' and 'man'. CT 'porcupine' is  $\eta áwta$   $awta$ , which like  $\eta \acute{u}:ta$  'man, boy'  $\eta uuts$ , preserves a final unstressed vowel in the suffix (1.4.).

1.2.2.1.2.4. Remarks: Although the archaic pattern of stress on the reduplicating syllable is evidenced only in CVK roots with CV:CVK plurals, it must have applied to all roots originally. Since other consonants were not subject to the Velar-weakening rules which caused the long vowels, the change in stress pattern from CVC)CVC to CVC)CVC would have had no other effect as long as unstressed vowels retained their original quality, e.g. for the plural of (15) 'to cook, boil  $s_t$ '

Early N  $cam)cam$  > Classical  $cam)cam$  >  $cim)cam$

It is likely that vowels in reduplicated forms maintained their identity longer than those in other kinds of complex forms.

1.2.2.2. Partial reduplication: Partial reduplication, which is used to inflect verbs for Progressive aspect, also forms the plural of a small number of nouns, indicating things or people frequently found in groups or sets. In partial reduplication, only the initial consonant is reduplicated. Often, the reduplicating consonant is weakened, for instance a glottalized consonant loses its glottalization (cf. 1.2.1.1.1.), a glide or glottal stop weakens to  $h$ .

1.2.2.2.1. Stress on the root:

- (33) N  $ci\acute{c}ip$  pl. of  $\acute{c}ip$  'bone(s)'  
 $*\acute{c}ip > c\acute{c}ip > ca\acute{c}ip$  N  $jits'ip$  pl. of  $ts'ip$
- (34) N  $m\acute{m}á:l$  pl. of  $m\acute{á}:l$  'canoe(s)'  
 $*m)m\acute{á}:l > mm\acute{á}:l$  N  $mhaal$  pl. of  $haal$
- (35) N  $huw\acute{il}p$  pl. of  $w\acute{il}p$  'house(s)'  
 $*w)w\acute{il}p > h)w\acute{il}p > huw\acute{il}p$  N  $huw\acute{il}p$  pl. of  $w\acute{il}p$

In the following form, the (unused) singular is a prefixed form, with stress on the root; the reduplicating consonant is the initial of the prefix.

- (36) N *haʔamwíl* (pl. form) 'goods, treasures,  
 \*ʔʔam-wíl > h)ʔamwíl > haʔamwíl riches' N *ha'amwíl*  
 PL)erving.for.-be/act

In the following form, partial reduplication is added to an archaic CV:Cvk plural (which shows regular vocalic correspondence, 1.2.2.1.2.1.a.) and a further intervocalic change *ń* to *l* (compare the ST equivalent, (30)):

- (37) N *nńi:luk<sup>W</sup>* pl. of *ńák<sup>W</sup>* 'to be long'  
 (root *√\*ńek<sup>W</sup>*; reconstructed plural *N nńiluk<sup>W</sup>*  
*\*ńi:ńuk<sup>W</sup>* from orig. *\*ńek<sup>W</sup>*) \*ńek<sup>W</sup> *N nńiluk<sup>W</sup>*  
 pl. of *ńak<sup>W</sup>*

1.2.2.2. Archaic stress on the reduplicated syllable: As mentioned above (1.2.), a few nouns with singular meaning have plural, reduplicated shapes. It is likely that the CT word for 'dog', *ńáas* (with falling vowel), was originally a partially reduplicated plural, typical of nouns (1.2.2.1.).

In the other languages, 'dog' is *ʔús* (N *us*) or *ʔós* (G, ST *os*) with a fully reduplicated plural, e.g. N *ʔasʔús* (N *as'us*, G, ST *as'os*). CT alone has a different singular form *ńáas* with a recent plural *ńak)ńáas* *ńakńáas* (1.2.1.2.). Assuming that *ʔús* is the original word dating back to the proto-language, it would make sense for this noun to have as a plural a partially reduplicated form. Such a form would start with *h* according to the morphophonemics of partial reduplication (1.2.2.1.); in the archaic period, stress would have been on the penultimate, thus the following evolution (all rules are independently justified, see T 1983b):

partial reduplication:	<i>ʔ)ʔus</i>
glottal stop weakening	<i>h)ʔus</i>
vowel insertion and adjustment	<i>haʔus</i>
penultimate stress	<i>háʔus</i>
unstressed vowel deletion	<i>háʔs</i>
CT glottal weakening > falling vowel	<i>ńáhs, ńáas</i> (cf. Dunn & Hays 1983)

The form resulting from these processes no longer sounded like a plural and became

the normal singular in CT. At a more recent period, *ńáas*, like many other CT nouns, acquired a modern CVk) plural (1.2.1.2.). If a partially reduplicated plural ever existed in the other languages, there is no trace of it at present.

1.3. Compounding: Compounding is a widespread and productive process in all the languages. Compound nouns, verbs (usually incorporating an Object noun), and adjectives can be built with or without a linking element.

1.3.1. Stress on second lexical element: In most compounds primary stress falls on the second element. There may be some weakening of the first, unstressed element.

- ex. without link: (38) ST *misʔóla* 'brown bear'  
 \*mesʔóla red-bear ST *mis'ola*

- (39) N *yòʔksnóʔt*, ST *yiksnóʔt* 'to wash the dishes'  
*yóʔks-nóʔt* wash.s + dishes N *yó'oksao'ohl*  
 ST *yiksao'ohl*

- ex. with link -a: (40) N *lày-a:ćú:ć* 'feather(s)'  
*lax-a:ćú:ć* fur- + bird N *lax ts'uuts'*

- (41) N *nńi:luk<sup>W</sup>a:qísT* 'to have long hair'  
*nńi:luk<sup>W</sup>-a:qís-T* lit. 'to be long-haired'  
 PL)ong-LINK-hair--ed N *nńilugwa-ges(t)*

1.3.2. Archaic stress on penultimate syllable: Unlike present compounds, which are stressed on the second lexical element, older compounds were stressed on the penultimate vowel. This vowel could be that of the first lexical item in the compound, if there was no linking element, or the vowel of the linking element between the two lexical items. Compounds of this archaic type are not always easy to identify, as the second, unstressed element may have become unrecognizable.

1.3.2.1. Stress on the first lexical item: A number of these compounds end in *-kit*, the weak form of *kát* 'people, man', older \**ket*, as in:

- (42) N *ńaltá:wkit* 'sorcerer'  
*ńaltá:x<sup>W</sup>-ket* anoint.g.-people' N *ńaldawgit*

- (43) N *simʔó:kit*, CT *smʔó:ykit* 'chief' (= 'protector, provider')  
 sim - \*ʔó: - \*ket really-protect <sub>g</sub> (?) -people  
*N sim'oogit*, CT *sm'oogyit*

Another common second component is a weakened form of *ʔáks* 'water', hence for instance:

- (44) N *hátiks* 'to swim' (lit. stand in water)  
 \*hét.\*ʔeks stand-water<sup>18</sup> N *hadiks*

- (45) N, ST *má:ks-T* 'to place <sub>g</sub> in water'  
 \*máq.ʔeks-T put/place(d)-water-Def.Med<sup>19</sup> N *maaks-di*

Note that the glottal stop which begins the second element *ʔáks* is deleted after the consonant ending the first element; this is normal for *ʔ* in archaic compounds, where *ʔ* is in an unstressed syllable, though not in more recent formations. The *q* of the first element is weakened and deleted in preconsonantal position by a normal, archaic rule, as in CV.Cvk plurals (1.2.2.1.2.) (thus \*máq.ʔeks > máqeks > máqks > máhks > má:ks).

1.3.2.2. Stress on the linking element: The linking element is always unstressed in modern compounds, but in archaic compounds the stress may be on the linking element, as long as it is the penultimate one: for instance:

- (46) N *Wiltíkitk<sup>W</sup>* 'war' N *ʔildigítw*

The origin of this word can be reconstructed as:

- wéHh-\*heHl-T-\*éHh-\*ket-t<sup>W</sup>*  
 (mod. *Wí:-hilt...*) great-many-LINK-people-Medial

that is, literally, 'multitude'.

The following two cases, which have the first element in common, can also be explained by stress on the linking vowel of a former compound:

- (47) N *likímtx*, ST *líki:mtx* 'wool' N *ligímtx*,  
 ST *ligímtx*

- (48) N *líkíl*, ST *ligí:l*, CT *ligí:l* 'eyebrows' N *ligíl*,  
 ST *ligí:l*, CT *ligí:l*

The wool used by the first nations of B.C. originally came from the mountain goat, N, G, ST *matx* CT *máti, méti*, all from earlier \**metx* (N, ST final X, a palatal, regularly corresponds to CT *í*). The end of the N word for 'eyebrows' (48) recalls the end of the word for 'eye', *čál* (*ts'a/*), which can be analyzed independently into *č-* 'in, inside' and \**ʔál* 'eye'. The initial portion common to both (47) and (48) recalls the words for 'fur, body hair', N, ST *lax*, CT *lí: líi*, both derivable from earlier \**lex* or more probably \**lek<sup>y</sup>*. The CT for 'wool' is *lí:mti* *liimti* or *li:méti* *liimeti*, the former a regular correspondence with the N and ST words, with stress on the first element, the latter a modern, reformed compound with stress on the second lexical element.

We can reconstruct the original for (47) as:

- \**lek<sup>y</sup>-\*éHh-\*metx*  
 'fur-LINK-mountain.goa'

with archaic stress on the penultimate, causing loss of the ultimate stress vowel between sonorant and obstruent (cf. above (13)). Similarly, the eyebrow (48) is the 'fur of the eye':

- \**lek<sup>y</sup>-\*éHh-\*ʔál*  
 'fur-LINK-eye'

1.4. Survival and creation of unstressed final vowels in MT: Nisgha words ending in an unstressed vowel are fairly rare; about the only instances are words ending in the old plural suffixes *-as* and *-di* (reconstructed as \**-teh* and \**-teHh* respectively, T 1990a). In MT such words are more common. In particular, the common N suffix *-T*<sup>20</sup> often corresponds to MT *-as* (cf. discussion of (32) and its cognates above). This suggests that there might have been many more unstressed final vowels in the proto-language.<sup>21</sup>

- (49) N *pé:x* ST *bí:xa* 'lungs' N *boex*,  
 ST *biix*

- (50) N, S ?áx<sup>W</sup>.T      CT ?áw.ta      'porcupine'  
reconstructed form \*?éx<sup>W</sup>-T      N, ST *axwt*, CT *awta*
- (51) N ?i:ʔux<sup>W</sup>.T      CT ?yú.ta      N 'men, boys' *i'uxwt*;  
reconstructed pl. \*?éx<sup>W</sup>?ex<sup>W</sup>-T      CT 'man, boy' *yuuta*  
(singular meaning)

Final unstressed vowels also result : (a) in ST and CT, from the loss of final post-vocalic ?:

- (52) N sqačí:pa?      ST sqačí:ba      'tie' N *sgats'iip'a'a*  
sqa-čí:p-(?a)?      sqa-čí:p-a      ST *sgats'iiba*  
across-tie-DETR

and (b) in CT, from the vocalization of final non-labial velar fricatives present in the other languages:

- (53) ST samx      CT sámī      'meat', CT also 'bear'
- (54) N tīlx      CT dú:la, CT dū:la      'tongue' N *dīlx*  
CT *duula*, ST *duula*

These independent developments probably helped preserve other final unstressed vowels in MT.

1.5. General conclusion on stress patterns: It should be obvious from all the above that the pattern of stress-assignment in the Tsimshianic languages originally placed stress on the penultimate vowel, while the more modern pattern places it preferably on the last syllable, usually the root. In every detail of morphological structure, the most archaic formations, identified by the presence of various irregularities, show that penultimate stress occurred very early in the history of these languages. The consequent loss of the ultimate vowel in many cases (e.g. \*léhH-máqs-T > N límqst 'to grow (pl.)' *limkst(t)*, \*ýáq)ýaq > ST ýá?yx 'to hang (pl.)' *'yx'yx*) led to a reinterpretation of the formerly penultimate vowel as the ultimate one, and to a new pattern of stress on the root vowel, which is usually the ultimate one.

This new pattern is valid in general for all the languages, but unstressed final vowels

after the root are still fairly frequent in MT, especially in CT, where Velar fricative vocalization has created new unstressed vowels. It is not surprising therefore to find that some correspondences can be traced back to the same complex proto-form, but with different stress patterns in different languages.

2. Cases of differential stress in IT and MT: In general, CT and ST words are stressed on the same part of the word as their N and G cognates, although historical evolution may have obscured the conditioning. But there are a few correspondences which can only be accounted for by a difference in stress at an earlier date. In these words, final stress in IT corresponds to penultimate stress in MT. This means that MT still preserved penultimate stress-assignment while IT had already adopted the present pattern.

2.1. 'Star': The words for 'star' in N and CT are obviously related, but are fairly remote from each other phonologically:

- (55) N pilísT      CT bíyalst      'star' N *bilist*  
CT *bíyalst*

The glottalized l̥ in the Nisgha word is not original, but results from the (regular) merger of l and ʔ, still separate in the Gitksan counterpart pilʔúst *bil'ust*. The CT *a* of *bíyalst* also indicates earlier glottalization of the l̥. The common ancestor for 'star' can be reconstructed tentatively (the components are un glossable at present) as

\*pehl-?ʷeHS-T

In the N and G words, stress occurs on the final syllable; the different vowels are regular N and G reflexes of the original vocalism. For Nisgha, the evolution is:

\*pehl-?ʷéHS-T > pilʔíst > pilísT.

In CT, stress occurs on the first, or penultimate syllable. The CT evolution is most likely:

\*péhl-?ʷeHS-T > pí:lʔesT > pí:lsT > pí:alsT > píyalsT.

2.2. 'Meat/bear': Another unusual correspondence is that of the words for 'meat' or 'bear':

(56) N, G smáx	CT sámi	'meat, bear'
	ST sámx	'meat'

a. The unusual thing about these words is the placement of the vowel. If N, G smáx reflected the original word-structure, one would expect CT to be \*smí:, which does not occur (cf. above N, G, ST láx *lax*, CT lí: *li* 'fur'). Conversely, if CT sámi reflected the original structure, then the N, G equivalent would be sámx as in ST, where the term means only 'meat'. It is likely then that all these forms go back to a bisyllabic ancestor, meaning 'meat', and that IT stressed the ultimate, MT the penultimate vowel. The ancestral form must have been something like \*semex,<sup>22</sup> thus the two evolutions:

(IT) \*semex > seméx > sméx > N, Gsmáx

(MT) \*semex > sémex > sémx > STsámx  
> CTsámi

c. The reconstructed form \*SEMEX however does not have a typical Tsimshianic shape, one where we could identify a root CVC. CVCVC shapes do appear in Tsimshianic, as a result of the postconsonantal, post-stress deletion of ? or h beginning a non-initial element, as in N hátiks 'to swim' *hadiks* from \*hét-\*?eks<sup>above</sup> (41). It is likely that reconstructed \*SEMEX is such a form, deriving from \*sem-\*?ex or \*sem-\*hex. ? and h pattern alike in these languages, but h is weaker than ? (e.g. 1.2.2.2.1.) and more prone to deletion.

For instance, in relatively modern forms, N ? is rarely deleted after a morpheme boundary, but h usually is, as shown by numerous words where etymological h can only be reconstructed through comparison with cognates, for instance:

(57) N ?amí	'voice'
*[?am-hí] serving for-say	N, G <i>ami</i> , CT <i>amhaw</i> ,
cf. CT ?am-háw, ST ?am-háw	ST <i>amhaw</i>

In this word the original h present in the CT and ST cognates has disappeared so completely that the word has been reinterpreted as a prefixed form ?a-mí as shown by its prefixed plural ?alimí *alimit* (?a-lə-mí-T, cf. (11) above).

(58) N qáyúkws	'smoked salmon'
qáy-*húkws still - sm. salmon fillets	fillets' N <i>k'ayukws</i>

The N word, originally including the modifier qáy 'still' *k'ay* used as a prefix, corresponds to unprefixated G húk<sup>WS</sup> *hukws* (probably originally a verbal form). The bare form is not known at present in N, where qáyúkws is treated as a single morpheme.

(59) N kipáykw, G kipáykw, CT gibáyk	'to fly'
kip-háykw <sup>W</sup> eat-odor/spirit	N <i>gibaykw</i> , G <i>gipaykw</i>
	CT <i>gyibayk</i>

(The semantics of this former compound may seem strange, but a bird which flies with bill open appears to be eating something invisible). In N, and MT, h has totally disappeared; in the corresponding G form, the only trace of its former presence is the uncharacteristically voiceless intervocalic consonant.

(60) N qanáta	'Raven-Frogclan'
qan-háta (< Tlingit qa-nəxʔádi)	N <i>Ganada</i> , older N,
	CT, ST <i>Ganhada</i>

In all these examples, forms which are h-less in N, have h or some consciousness of etymological h in other languages. This would seem to be an argument against placing the deletion of h at the time of the proto-language, but since deletion of ? did occur then, deletion of the weaker h would certainly have occurred as well. A reconstruction \*sem-\*hex as well as \*sem-\*?ex for \*SEMEX is therefore plausible.

c. Turning now to the semantic aspect, the present-day words all have 'meat' as their primary meaning (in ST, as the sole meaning), 'bear' as a secondary meaning. For instance, for 'bear meat' N uses the phrase

(61) N smàya:ʔúl	'bear meat'
smáx-a-ʔúl meat-LINK-bear	N <i>smaya ul</i>

where the word used for 'bear' is the common Tsimshianic word ʔúl or ʔól (N *ul*, G, CT, ST *ol*). As in many other languages, the word for 'meat' is extended or transferred

to the animal that is the most typical or best source of meat (e.g. Hess 1979). In the reconstruction \*SEM\*?EX or \*SEM\*hex, the first element \*SEM can be identified as the modifier SIM 'very, really', often used in all the languages as a nominal prefix meaning 'real, best, ideal' as in N SIM\*QÁN 'red cedar' *simgaa*, lit. 'real/best/ideal tree/wood' (cf. also (43)). The second element \*?EX or \*hex then is the one meaning 'meat.' The problem is to determine which one of these is right.

- d. The two reconstructions \*?EX and \*hex which might mean 'meat' are of the shape √\*CEC. As mentioned above (1.), many proto-Tsimshianic roots of the general shape CVC occur both as \*CVC or \*CVHC, the present reflexes of which usually share some element of meaning (cf. (30), (44), fn. 18). A root √\*CEC usually corresponds to a present shape CÁC in all the languages, while a root √\*CEHC corresponds to CT CÉ:C or Cí:C, ST Cí:C, N, G CíC.<sup>23</sup>

Taking into account other known correspondences, a proto-language root √\*CEX then would appear as N, G, ST CÁX, CT Cí:, while a root √\*CEHX would appear as CT CÉ:y, ST Cí:x, N, G Cíx (T 1990a).

The latter fits the pattern of the word for 'fat' (as a noun), CT yé:y *yey*, ST yí:x *yix*, N híx *hix* which can all be derived regularly from a root √\*hÉHX. The semantic common ground between 'fat' and 'meat' is obvious, both being rich animal foods.<sup>24</sup> Thus we reconstruct for the proto-language a pair of roots √\*hÉHX meaning 'fat,' and √\*hex meaning 'meat,' and we take the reconstruction \*SEM\*hex as the probable source of the meaning 'real/best/ideal meat,' with the following derivations.<sup>25</sup>

	*sem-*hex	
h - deletion /C*_	semex	semex
stress-assignment:	(N, G)	(ST, CT)
	seméx	sémex
é > á /C.C	smáx	sámx
unstressed v - deletion	smáx	sámx
CT velar weakening and vocalization		sámi

3. **Concluding remarks:** This study of stress patterns complements and confirms earlier work on plural formation and on the structure of Tsimshianic roots,

advancing one step further towards reconstruction of the proto-language. In all identifiable periods, the basic patterns of affixation, reduplication and compounding remain at the core of Tsimshianic morphological structure and are reapplied again and again as phonological and semantic changes prevent analyzability. With growing knowledge of the structure of the proto-language and the changes that led to later differentiation, surprising etymological discoveries continue to be made, as words become more transparent to analysis.

## NOTES

\* This is a considerably revised and expanded version of Tarpent 1990c.

1. The Nisgha data presented here were collected during the course of my employment with the Bilingual/Bicultural Centre of B.C. School District \*92 (Nisgha), in 1977-80, in the summer of 1982, in 1983-88 and in the summers of 1989, 1990, 1991 and 1993. Analytical work on the language was supported by SSHRC doctoral fellowships held at the University of Victoria in 1981-82 and 1982-83. I have had the privilege to learn what Nisgha I know in its natural environment, from excellent speakers. I especially wish to thank, in alphabetical order, Mrs. Audrey A. Gosnell, Mrs. Nita Morven, Mrs. Rosie Robinson, Mrs. Verna Williams, all present or former teachers of the Nisgha language, and Mr. Harold Wright, who is an elder and a hereditary chief in the Eagle clan. Mr. Bert McKay, then coordinator of the Bilingual/Bicultural Centre and a hereditary chief in the Frog/Raven clan, arranged for me to have access to these and other resource persons.

The Southern Tsimshian data were collected from Mrs. Violet Neasloss, one the last speakers of this language, whom I wish to thank for her patience and good humour. Fieldwork in Prince Rupert in 1991 and in Klemtu in 1992 was supported by internal grants from Mount Saint Vincent University. Fieldwork in Klemtu in 1993 was supported by a SSHRC grant.

Coast Tsimshian data from Dunn 1978, 1979. Gitksan data from Hindle & Rigby 1973.

The conclusions in this paper are my own, and I alone am responsible for any errors.

2. Examples are given first in phonemic transcription. A right parenthesis without its left partner is placed after a reduplicated element. A \* sign is placed between the members of a compound. Elements between brackets are epenthetically added. Deletion of elements between square brackets is phonologically conditioned. Examples are also written in italics in practical orthographies, unless the characters of both transcriptions are identical. The Nisgha and Gitksan alphabets, established by Rigby, and the CT one by Dunn, have been in use in local communities for a number of years. ST has not had an official writing system, but here a practically oriented spelling using appropriate elements of the Nisgha, Gitksan and CT alphabets has been used. See also note 8.

3. The symbol T is used for a N suffix whose shape varies according to the phonological environment where it is found: it is sometimes t, sometimes t followed by a vowel, sometimes t preceded by another, epenthetic t, sometimes a vowel only.

sometimes zero (T 1989). This suffix, tentatively glossed as 'Definite Medial,' often occurs in combination with others which have a more specific meaning. Here the combination *-ls-T* is treated as a single suffix *-lsT*.

4. Capital P here indicates that this stop remains voiceless, while N, G plain stops are normally voiced before vowels.

5. Actually *miy67-[t]-s* since a full description must include the 3rd person suffix *-t*; a phonological rule simplifies the resulting *ts* combination to *s*.

6. Apart from the equivalents of these words, MT *ma(h)* seems to correspond to IT *xi* *hli*, which can indicate a previous or past event, as well as a previously owned (thus 'alienated') or less personal possession (T 1986). However, the MT particle seems to be of more general use, both for past tense and for possession, than the IT particle, which is less frequent.

7. cf. note 5.

8. In writing CT words here, all x's have been underlined in order to facilitate comparison with the other languages, which have a contrast between front and back velar fricatives, indicated in writing by *x* and *ɣ* respectively.

9. Bruce Rigsby (p.c.) has suggested that this (currently non-productive) suffix should be glossed 'instrumental.'

10. e.g. N *ʔanʔəm* 'hand(s) *an'ua*, formed on root *ʔəm* which is used in composition, e.g. in *həyɔks'untkw* 'soap' (*hə-[yɔʔks+ʔəm-tkʷ]* INSTR-[wash.s.+hand-Medial]).

11. A more modern method uses the prefix *qa-*, especially for adjectives. This prefix is placed in front of other prefixes, e.g. N *qamiwácɣ* *gamiwatsɣ* pl. of *miwácɣ* 'naughty, crazy' *miwatsɣ* (prefix *mə-* 'acting like', *wácɣ* 'otter' *watsɣ*).

12. In present-day MT, this rule applies only to back, not front, velars, e.g. CT, ST *t'ik)t'aky* pl. of *t'aky* 'to forget', cf. (1.3.3.) but must have applied more generally at an earlier date, during the period of Archaic plurals.

13. See T 1983b, 1989 for a more thorough discussion of this form of reduplication in N, Dunn 1979b for CT.

14. It has been suggested (Thompson 1984) that stress occurs on the first vowel of these plurals because this vowel is long and thereby "attracts stress". This suggestion does not take into account the many examples of unstressed long vowels in N. The long vowel in these forms is stressed because it continues the original stress pattern. Thomson also attempted to derive these N forms -- demonstrably the most archaic -- from Cix) forms -- demonstrably the most recent.

15. The original root vowel in the second syllable can be shown to have been deleted, then a new, predictable vowel reinserted (T 1983b).

16. The change *k* > *l* after consonant is normal.

17. The infix H (see 1.) can be reconstructed in the roots of some archaic plurals corresponding to H-less singular roots (T 1990a), as well as in singular roots.

18. cf. CT pl. *lɔ-hé:tiks* *lahoodiks* w. pl. prefix added; orig. root *√\*həHt*.

19. Note that these archaic compounds incorporate a locative complement, not just a direct object.

20. See note 2. The suffix must have had an unstressed vowel in the proto-language.

21. cf. also the ST form for 'bear' in (38), \**ʔ61a* (normally ST 'bear' is *ʔ61*, cf. (61)).

22. or \**səmekʷ*, cf. the word for 'fur' above, 1.3.2.2., but this is irrelevant here.

23. Details may vary depending on the precise nature of the consonants involved, which can influence vowel quality, T 1990a. Actually the vowel reconstructed here as *e* must have been originally *ə*, cf. T 1990c, see also note 23, 2x. (30).

24. The importance of animal fat in earlier times can be inferred from its frequent mention in stories (e.g. Boas 1902). In descriptions of abundant food reserves, listing a wide variety of foods, fat is mentioned prominently, meat is not mentioned as such apart from the names of specific animals. From a nutritional point of view, the traditional fish-based diet provided ample protein, but little fat or calories; animal fat, such as seal blubber, supplied both. Under those circumstances the 'best meat' would have been one which was rich in fat, such as bear meat.

25. The reconstruction stage \**səməx* [SƏMƏX] (see note 23) and older N \**səməx* [SƏMƏX] show a distinct resemblance with a form \**SIMƏYƏ* 'meat,' later 'deer,' reconstructed for proto-Salish (Hess 1979). It could be a coincidence, but it is also perhaps possible that the proto-Salish form was a borrowing from proto-Tsimshianic, with the meaning 'meat,' after the operation of the rule of *h*-deletion. If this is indeed a borrowing, its transmission raises interesting historical questions, since the Salishan and Tsimshianic domains are not contiguous at present. Such speculations are beyond the scope of this paper.

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