

Root-expansion in Haisla *)

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- 3.1 Root-expansion in Haisla comprises reduplication and root-vowel expansion, the latter consisting of special cases with initial h-/ʔ- as well as vowel-insertion or vowel-lengthening or -doubling.
- 3.2 Root-expansion generally serves to express a variety of grammatical categories:
- a) plural
 - b) continuative
 - c) specification or intensification of an act or situation
 - d) lexicalized forms
- Reduplication as a separate means to express distribution is relatively rare in Haisla. Distributive meaning is frequently included in plural reduplication.
- 3.3 As far as reduplication is concerned total and partial reduplication must be distinguished. Partial reduplication can be subdivided into initial and internal reduplication. Initial reduplication is the most frequent reduplication-type as the majority of plural-formation consist of it.
- 3.31 Among the special morpho-phonemic changes other than the general ones of 3.3. are:
- initial s- changes into y- in second syllable (as in /sa'ykla/ pl. of sa'kla "to use s.th." (sak-))
 - initial lateral obstruent changes into l/1- in second syllable. Roots of the type C₁C₂ generally reduplicate with l- in second syllable, roots of the type C₁VC₂ with 1- in second syllable (as in /ʔi':lk^oani/ pl. of ʔk^oa'ni "old lady" resp. /ʔu':lta/ pl. of ʔu'ta "lame")
 - plosive replaced by homorganic fricative (as in /ʔ'x^omʔx^ola/ pl. of ʔ'm^ola "to be damaged")
 - unrounded velar/uvular alternating with rounded one (as in /cxcx^o/ pl. of c^ox^o "short")
 - labialization of velar/uvular after u e.g. in several cases with x-insertion (as in /ʔu'x^oʔ^olic/ "strawberry" from a root ʔul-) is automatic.
- 3.311 The meaning of the symbols in the following scheme is:
- P - partial reduplication
 - T - total reduplication
 - C - consonant
 - V - vowel

3.32

	root	I	II	III	IV
P ₁ -A	C ₁ V... →	C ₁ C ₁ V			C ₁ × C ₁ V
P ₁ -B	C ₁ C ₂ ... →	C ₁ C ₁ C ₂	C ₁ iC ₁ C ₂ C ₁ aC ₁ C ₂ C ₁ iC ₁ aC ₂ C ₁ aC ₁ aC ₂	C ₁ isC ₁ C ₂ C ₁ asC ₁ C ₂	C ₁ × C ₁ C ₂
P ₂	C ₁ VC ₂ ... →	C ₁ VC ₁ V	C ₁ iC ₁ V C ₁ aC ₁ V	C ₁ isC ₁ V C ₁ asC ₁ V C ₁ aC ₁ V	C ₁ V × C ₁ V
P ₃	C ₁ VC ₂ ... → C ₁ NC ₂ ... →	C ₁ VC ₁ C ₂ C ₁ NC ₁ C ₂	C ₁ VC ₁ aC ₂ C ₁ NC ₁ aC ₂	C ₁ VsC ₁ C ₂	C ₁ V × C ₁ C ₂ , C ₁ VC ₁ × C ₂
T ₁ -A	C ₁ V... →	C ₁ VC ₁ V			
T ₁ -B	C ₁ C ₂ ... →	C ₁ C ₂ C ₁ C ₂		C ₁ C ₂ isC ₁ C ₂	C ₁ C ₂ × C ₁ C ₂
T ₂	C ₁ VC ₂ ... → C ₁ NC ₂ ... →	C ₁ VC ₂ C ₁ VC ₂ C ₁ NC ₂ C ₁ NC ₂			
T ₃	C ₁ VC ₂ ... →	C ₁ VC ₂ C ₁ C ₂			

3.33 Examples:

$C_1V.. \rightarrow C_1C_1V$: /dda'ɣkn/ "s.b. exhausted of laughing" (daɣ-), /ddu'x⁰bs/ "s.b. staring at someone else" (duq⁰-), /ɣɣo'k⁰la/ "to train in sports" (ɣok⁰-), /ɣ⁰ɣ⁰la'yu/ "lipstick" (ɣ⁰la-), /ppa'ɣla/ "swallow" (paɣ-), /zzi'q⁰la/ "to calm down a child" (ziq-), /qqaplila's/ "smoke-house" (qap-), /qqa'ɣla/ "person in training, apprentice" (qa-)
 $\rightarrow C_1xC_1V$: /q⁰xqu's/ "lakes" (qu-), /q⁰xqawi's/ "pool" (qu-), /w⁰x:wa'ɣis/ "big rivers (distr.)" (wa-)

$C_1C_2.. \rightarrow C_1C_1C_2$: /g⁰g⁰n'm/ "women" (g⁰x-), /bblgaɣbo'ɣ/ "continuous nose-bleeding" (blk-), /ttg⁰a'xswa/ "to scratch at the door" (tk⁰-), /sska's/ "spruce" (sk-), /g⁰g⁰'s/ "eye" (g⁰s-), /ɣ⁰ɣ⁰'lx⁰tam/ "absent-minded" (ɣ⁰l-), /x⁰x⁰ldzwa/ "volcano" (x⁰lt-)

$\rightarrow C_1iC_1C_2$: /bi'b⁰x⁰a/ pl. of b⁰x⁰a "to make laces out of skin", /li':lk⁰ani/ pl. of l⁰k⁰a'ni "old lady", /li:l⁰x⁰wala's/ pl. of l⁰x⁰wala's "envelope", /qi'qt⁰kani/ "fingerring" (qt-), /si'snilm/ "group of well-to-do people" (sn-), /titpa'/ pl. of tpa "to fish", /k⁰ik⁰cme'/ pl. of k⁰cme' (k⁰s-) "stamp", /xi':xsa/ pl. of xsa "to disappear from view", /ci':ck⁰a/ "people working with the ck⁰a, fishtrap that functions with the tide", /ni:nx⁰a'la/ pl. of nx⁰a'la "near", /bi'bg⁰anm/ pl. of bg⁰a'anm "human being, person"

$\rightarrow C_1isC_1C_2$: /gisg⁰lt⁰x⁰d/ pl. of g⁰lt⁰x⁰d "tall (persons)", /wi's:w⁰lqa/ pl. of w⁰lqa "to get scared, to fear", /g⁰i'sg⁰samu/ "to fall over a log or rope, to stutter" (g⁰s-), /pi'spl/ pl. of pl "thin (layer)", /mi's:mnɣ/ pl. of mnɣ "enough, full"

$\rightarrow C_1aC_1C_2$: /ka'kna/ "humming-bird" (kn-), /ba'bla/ "jealous (sexually)" (bl-), /qa'cnayu/ "rope set as a trap" (qn-), /qa'qlk⁰a/ "snake" (qlk⁰-)

$\rightarrow C_1asC_1C_2$: /pa'spli/ "temples" (pl-), /ɣ⁰a's⁰ake/ "islands(invisible)" (ɣ⁰ak⁰-)

$\rightarrow C_1iC_1aC_2$: /lila'k⁰ila/ "to ask a girl for intercourse" (lk⁰-), /lila'k⁰ala/ "displaced persons (european immigrants)" (lk⁰-), /g⁰ig⁰a'kwala/ pl. of g⁰e'kwala "to gossip" (g⁰k-)

$\rightarrow C_1aC_1aC_2$: /ɣa'ɣalasila/ "to perish (to die by losing consciousness)" (ɣl-), /ɣa'ɣapila/ "tweezers" (ɣp-), /qaqala'/ "to adopt" (qɣ-), /gagabmo'ɣ/ "button-blanket" (gp-), /g⁰a⁰g⁰a'p/ "father, grandparent" (g⁰p-), /kaka'dikayu/ "deadfall without a bait" (kt-), /sayaxsma'/ "to play pool" (sk-)

$\rightarrow C_1xC_1C_2$: /q⁰xq⁰yu'a⁰s/ "underbrush" (q⁰s-) Exceptional case.

- $C_1VC_2 \dots \rightarrow C_1VC_1V$: /pu'pu⁰ks/ pl. of pu⁰ks "pot-bellied", / λ alaka'p/ "canoe-race" (λ ak-), /na'naq⁰a/ "dawn" (naq⁰-), /qaqa'pla/ "to smoke meat, salmon" (qap-), /xi'xi'nm/ pl. of xi'nm (xi'x-) "stone used for planing", /bi'bika/ pl. of bi'ka "to transfer fire from one place to an other", /sayaj⁰ano'j/ "prairie (big long terrace)" (saq⁰-)
- $\rightarrow C_1iC_1V$: /ri'pa'x⁰/ pl. of pa'x⁰ "blind", / λ i λ a'daci/ pl. of λ a'daci "can of lubricating oil", / λ i λ u'p/ pl. of λ up "cooked, hot", /sisa'la/ pl. of sa'la "tame", /dida λ le'/ pl. of da λ la' "to laugh", /qige λ a's/ "offspring" (geq-), /wiwe'j/ pl. of wej (we λ -) "weak"
- $\rightarrow C_1isC_1V$: /ji's λ ox⁰/ pl. of λ ox⁰ "strong" Not productive.
- $\rightarrow C_1aC_1V$: /ca'cik⁰a/ "hawk" (cik⁰-), /ta'ticila/ "mine" (tas-), /dadux⁰cwa'/ "to spy" (duq⁰-), /k⁰ak⁰i λ siva'/ "to peep" (k⁰iq-)
- $\rightarrow C_1asC_1V$: /dasdig⁰na's/ "baby duck" (dik⁰-), /k⁰ask⁰ik⁰. λ da'/ "cross-beaked bird" (k⁰ik⁰-)
- $\rightarrow C_1ajC_1V$: /ba λ bule'/ "rosehip" (bu λ -) Exceptional case.
- $\rightarrow C_1VxC_1V$: / λ a' λ aws/ pl. of λ a'ws "tree", /wo'x:woli/ "poisonous root, wild carrot or turnip" (woj-)

- $C_1VC_2 \dots \rightarrow C_1VC_1C_2$: /ya'ypa/ pl. of ya'pa "to send a person", / λ a λ dila's/ pl. of λ a λ dila's "oil station", /mu':mq⁰ λ d/ "white salmon" (muq⁰-), / λ u λ be'la/ pl. of λ ube'la "point of land", /dudq⁰lama'/ "to show s.th. to s.b." (duq⁰-), /ju':lq⁰/ pl. of juq⁰ "basin", / λ a:lwine'/ pl. of λ awine' (j λ x⁰-) "close friend, to like s.b.", /qa:qqawa'/ "sawdust" (qaq-), /sa'ykla/ pl. of sa'kla "to use s.th.; to come from a bigger boat into a smaller one", /xu':x⁰k⁰iza/ "tallow" (xuk⁰-), /mi':m λ a/ pl. of mi' λ a "to miss a shot", /qi'q λ id/ pl. of qi' λ id "to lie"
- $\rightarrow C_1VC_1aC_2$: / λ u λ a' λ l/ pl. of λ u' λ l "nephew, niece", /mumak⁰u'dalyala/ "to keep tying together" (muk⁰-)
- $\rightarrow C_1VsC_1C_2$: / λ a's λ λ / pl. of λ a λ "stiff", /wi'sw λ / pl. of wi λ "thin (said of a tree)", / λ is λ q⁰. λ da' λ yu/ "lipstick" (λ aq⁰-)
- $\rightarrow C_1VxC_1C_2$: / λ u'x⁰ λ ls/ "strawberry" (λ ul-), /qu'x⁰q⁰s/ "little puddles of rain" (qus-)
- $\rightarrow C_1VC_1xC_2$: /mu':mx λ u λ cwa/ "to bubble over on heat" (mu λ -)

Note. Several roots of the type C_1NC_2 reduplicate as the type P_3 (partial) or as T_2 (total). N in these roots behaves like V in C_1VC_2 .

- $C_1NE_2 \dots \rightarrow C_1NC_1C_2$: /x⁰'m:x⁰tu λ cud/ pl. of x⁰'mtu λ cud (x⁰mt-) "to pump fuel out of a drum", /q⁰mq⁰ λ ila'/ pl. of q⁰m λ ila' (q⁰m λ -) "to raise a child"
- $\rightarrow C_1NC_1aC_2$: /x⁰lx⁰a'tawa/ "burnt out things of which one can still see the forms" (x⁰lt-)

- $C_1V \dots \rightarrow C_1VC_1V$: /dada'la/ "to grab, to accept, receive s.th." (da-),
/papa'xsiwa/ "to put a boardwalk on" (pa-), /lalaqu'/ "to fight"
(la-), /ǰ^oiǰ^oisdala's/ "the way things go, 'method'" (ǰ^oi-), /la'la/
"to go upstream" (la-)
- $C_1C_2 \dots \rightarrow C_1C_2C_1C_2$: /cx^oc'x^o/ pl. of c^ox "short", /p'lp^olp^o/ pl. of p'lp
"mutual way of adressing of sisters-in-law", /txtǰ^oi'χa/ pl. of
tǰ^oi'χa (tk^o-) "to put down a sack with content", /qt:qta'/ "s.th.
that goes in and out, pocket-knife" (qt-), /qpqbi's/ "cand" (qp-),
/q'qlc.qyud/ pl. of q'lc.qyud (qlc-) "to put oil in one's hair",
/qlqlcwa'/ pl. of qlcwa' (ql-) "deep (plate)", /m'nmcna/ pl. of
m'nca "to measure, to interrogate", /k^oχk^oqa'/ "big kind of woodpecker
with bright red feathers under the wings" (k^oq-), /χ'nχnta/ pl. of
χ'nta "to blow one's nose", /wsws'm/ "beard" (ws-), /ǰχǰk'ls/ "un-
married young woman" (ǰk-)
- $C_1C_2isC_1C_2$: /χlisχlu'd/ pl. of χlu'd "to anaesthetize"
- $C_1C_2xC_1C_2$: /χlxχ'lka/ pl. of χ'lka "convulsions, someone who is
prone to fainting", /q^on^oxq^onka/ "fallen tree that is crushed to pic-
ces" (q^on-) **
- $C_1VC_2 \dots \rightarrow C_1VC_2C_1VC_2$: /ha'shasa/ "to breathe" (has-), /wi's:wisa/ "unmarried
young man" (wis-), /yaxyakli'χ/ "sickly person" (yak-), /?i'x?ike/
"to swing a hammer" (?ik-), /k^oi'χk^oica/ "continuous winking" (k^oic-)
/ku'x^okuk^oa/ "to jerk" (kuk^o-), /ku'χ^okuq^oa/ "to keep pulling" (kuq^o-)
- $C_1NC_2 \dots \rightarrow C_1NC_2C_1NC_2$: /χ'mxχmk^oa/ "to hop on two feet, to leap" (χmk^o-),
/?ms?nis/ pl. of ?ms "thick (layer)", /klpk^olba's/ "doorknob" (klp-).
/χ'mχmχa/ pl. of χ'mχa "to be damaged", /qlxqlg^oila's/ "hospital"
(qlk^o-), /χ'mχχmqa/ "to hop on one foot" (χmq-)
- $C_1VC_2 \dots \rightarrow C_1VC_2C_1C_2$: /ka'tkts/ "group of trees lying on the ground" (kat-),
/du'sdsamu/ "numb (leg)" (dus-), /qa'pqp.sa/ "to tidy s.th. up"
(qap-), /ǰ^oa'χǰ^oχa/ "to order s.th. by mail" (ǰ^oaχ-)

3.34 Remarks.

1. The above scheme clearly indicates that plural-formation, as far as partial reduplication is concerned, mainly occurs in column I (P_1 -B, P_2 , P_3), in the i-reduplication of column II and in the (i)s-reduplication of column III. As far as total reduplication is concerned, T_1 -B as a whole renders plural-
formations.

Reduplication as a means to specify an act or situation, or to render lexicalized forms, occurs in almost every type.

Continuative meaning is rather narrowly confined. Except a few cases in the partial reduplication-types, it is mainly represented in the class of total

Moreover there is a special type of reduplication with exclusive continuative meaning. It can be considered as a sub-category of T_2 and is formed by adding -k resp. -x in the first syllable behind the simplex (root + a). According to informants this is a general way to express continuative meaning. The examples in our lexicon are the following:

/pa'laxpalaka/ "to keep on working" (pa'la "to work"), /ʔa'qaxʔaqaka/ "to keep opening" (ʔa'qa "to open"), /qu'maxqumaka/ "to keep howling" (qu'ma "to howl (wolf, coyote)").

2. Interior reduplication. Though the overwhelming majority of partially reduplicated forms is made up by initial reduplication, there are a few items that show interior reduplication. The examples in our lexicon are:

/h'mʔmzzu/ pl. of h'mzzu (hms-) "table", /h'lʔlʔiniʔ/ pl. of h'lʔiniʔ (hlʔ-) "killerwhale, blackfish". Completely irregular is /hʔ'mcanu/ pl. of h'mcanu (hms-) "utensil for eating, fork".

3. An irregular non-productive type is $C_1C_2 \rightarrow C_1C_2C_1$, the only examples being /qn:qʔawa'/ "necklace" (qn-), /qnaqna'u'd/ "to stitch together" (qn-).

4. A special case of reduplication may be considered the instances in which initial Y prefixes ha-/hi-:

/hawa'niqla/ "to work on s.b.'s nerves" (wa'niqa "to be fed up with s.th., to be bored of s.th./s.b."), /hawlqala'/ "to 'ghost', scare s.b." (w'lqa "to get scared, to fear"), /hana'qbuk^on/ "to be thirsty" (naqa "to drink"), /hawaʔi'd/ "prankster, to prank" (wa'ʔa "crazy, insane"), /hya'qʔq^oya/ "to overdo s.th." (yaqʔ "to do"), /h'yswala/ "slaying of a group of people" (ysa "to hit"), /hin.mʔa'lisle/ "to go up the river" (yxa "to ride the river upwards").

3.4 Special cases with initial h-/ʔ-

The majority of instances with initial h-/ʔ- behaves regular i.e. according to different reduplication-types as rendered on p.2. In the following survey all different cases with initial h-/ʔ- will be given, both regular and irregular types. Concerning the regular types a reference will be given to the specific category together with one example each, as the regular ways of reduplication have already been treated in 3.32/3.

- 1) a. $hC_2 \rightarrow hi^?C_2$ ($=^*hihC_2$) ($C_1iC_1C_2$)
 $?C_2 \rightarrow ?i^?C_2$
 b. $?C_2 \rightarrow ?a^?C_2$ ($C_1aC_1C_2$)
 c. $hC_2 \rightarrow hyaC_2$
 d. $?C_2 \rightarrow ?iC_2$
 e. $?C_2 \rightarrow ?C_2^?C_2$ ($C_1C_2C_1C_2$)
 f. $?C_2C_3 \rightarrow ?C_2C_3^?C_2C_3$ ($C_1NC_2C_1NC_2$)

Examples: la. /hi^on'm/ pl. of hn'm "song, record", /?i^o?ni's/ pl. of ?ni's "auntie" lb. /?a^o?nq^oa/ pl. of ?'nq^oa "to look for a shady spot" lc. /hya'yx^o/ pl. of h'yx^o "inner bark of a cedartree" ld. /?i'me/ pl. of ?me' "small", /?isi'^og^ois/ "both sides of the valley" pl. of ?si'^og^ois le. /?'l?lka/ pl. of ?'lka "finished, stop" lf. /?'n^ox^o?nq^oi/ "fog on ocean" (?nq^o-)

- 2) a. $haC_2 \rightarrow hi^?aC_2$
 $?aC_2 \rightarrow ?i^?aC_2$
 b. $haC_2 \rightarrow hyaC_2$
 $?aC_2 \rightarrow ?yaC_2$
 c. $haC_2 \rightarrow ha^?C_2$
 $?aC_2 \rightarrow ?a^?C_2$
 d. $haC_2 \rightarrow hi^?C_2$
 e. $haC_2 \rightarrow haC_2haC_2$ ($C_1VC_2C_1VC_2$)
 f. $ha^?iC_2 \rightarrow haya^?iC_2$
 g. $?aC_2 \rightarrow ?ayaC_2$

Examples: 2a. /hi^o?a'skn/ pl. of ha'skn "out of breath", /hi^o?a'xg/ pl. of ha'xg "poor", /hi^o?ag^olu'/ pl. of ha^olu' "rope", /hi^o?a'sla/ pl. of ha'sla "to smell" /?i^o?a'g^oala/ pl. of ?a'g^oala "to answer", /?i^o?a'maka/ pl. of ?a'maka "first", /?i^o?a'l.mskala/ pl. of ?a'l.mskala "to make a joke", /?i^o?a'ɣa^oala/ pl. of ?a'ɣa^oala "to join in for the first time (e.g. in an organisation)", /?i^o?a'xutmls/ pl. of ?a'xutmls "back side" 2b. /hya'xcwala/ pl. of ha'xcwala "to yawn", /hya'x?id/ pl. of ha'x?id "to lift up (also:fog), to valve", /?ya'luɣ/ pl. of ?a'luɣ "young, fresh", /?ya'l.xdyut/ pl. of ?a'l.xdyut "newcomer" 2c. /ha'was/ pl. of ha'was "lumber that is well dressed and seasoned", /ha^o?ya'p/ pl. of haya'p "to play hide and seek", /ha^o?ya'/ pl. of haya' "to hide (oneself)", /?a^o?x^oa/ pl. of ?a^ox^oa "to skim off", /?a^o?laci/ pl. of ?a^olaci "coffin", /?a^o?na'ɣza^ox^o/ pl. of ?ana'ɣza^ox^o "to thank" 2d. /hi^o?ɣa'/ pl. of ha^oɣa' "to rest", /hi^o?ɣa'qa/ pl. of ha^oɣa'qa "to order, send for s.th." 2e. /ha'shasa/ "to breathe" (has-) 2f. /haya'isu/ pl. of ha'isu "arm" 2g. /?a'yaqa/ pl. of ?a'qa "to come, to arrive"

- 3) a. $hiC_2 \rightarrow hi^?C_2$ ($=^*hihC_2$) ($C_1VC_1C_2$)
 $?iC_2 \rightarrow ?i^?C_2$
 b. $?iC_2 \rightarrow ?i^?iC_2$ (C_1VC_1V)
 c. $?iC_2 \rightarrow ?a^?iC_2$ (C_1aC_1V)
 d. $hiC_2 \rightarrow hayaC_2$
 $?iC_2 \rightarrow ?ayaC_2 / ?yaC_2$
 e. $hiC_2 \rightarrow hyeC_2$

Examples: 3a. /hi'la'q^oala/ pl. of hila'q^oala "noise", /?i'?'ga/ pl. of ?i'ga "to store s.th. away" 3b. /?i'?'tdma/ pl. of ?i'tdma "oarlock" 3c. /?a'?'i'xkna/ "to charm s.b. too much, too much medicine" (?iq-) 3d. /ha'yas.x^o/ pl. of hi's.x^o "marriage", /ha'ya'ziwa/ pl. of hi'ziwa "to flee", /ha'ya'cwa/ pl. of hi'cwa "to fit (clothes)", /ha'ya'izma/ pl. of hi'izma "to pack everything up", /ha'ya'iqa/ pl. of hi'iqa "to permit", /ha'ya'ak^oila/ pl. of hi'ak^oila "to hurt", /ha'ya'la'xa/ pl. of hi'la'xa "to clean", /ha'ya'laqa/ pl. of hi'laqa "cousin", /ha'yax'lsa/ pl. of hi'x'lsa "to pile neatly up outside", /ha'yaxti/ pl. of hi'xti "head", /?a'yakuya/ pl. of ?i'kuya "to beat s.b., to win a contest", /?yakla'/ pl. of ?ikla' "to be good at s.th., enthusiastic" 3e. /hye'idknala/ pl. of hi'idknala "handsome powerful looking guy", /hye'lwala/ "people going back upriver" (hi'lwala "back eddy")

- 4) a. $heC_2 \rightarrow hyeC_2$
 $?eC_2 \rightarrow ?yeC_2$
 b. $heC_2 \rightarrow hi^?eC_2$

Examples: 4a. /hye'ita/ pl. of he'ita "beautiful", /hye'ma/ pl. of he'ma "to deny", /?ye'ka/ pl. of ?e'ka "to treat a person", /?ye'ga/ pl. of ?e'ga "to save a person" 4b. /hi'?'e'laq^oma/ pl. of he'laq^oma "to underestimate one's neighbour", /hi'?'e'lux^olan/ pl. of he'lux^olan "dancer's headdress"

- 5) a. $?oC_2 \rightarrow ?yuC_2$
 b. $?oC_2 \rightarrow ?i^?oC_2$ (C_1iC_1V)

Examples: 5a. /?'yup/ pl. of ?op "father", /?'yulm/ pl. of ?o'lm "toy" 5b. /?i'?'o'macila/ pl. of ?o'macila "to work hard", /?i'?'o'x^olaci/ pl. of ?o'x^olaci "quiver, packsack"

- 6) a. $huC_2 \rightarrow hu^?C_2$ ($C_1VC_1C_2$)
 $?uC_2 \rightarrow ?u^?C_2$
 b. $huC_2 \rightarrow hu^?uC_2$ (C_1VC_1V)
 $?uC_2 \rightarrow ?u^?uC_2$
 c. $?uC_2 \rightarrow ?a^?uC_2$ (C_1aC_1V)
 d. $huC_2 \rightarrow hawaC_2$
 $?uC_2 \rightarrow ?waC_2$
 e. $huC_2 \rightarrow hyC_2$

Examples: 6a. /hu'ʔsa/ pl. of hu'sa "to count", /ʔuʔda'yu/ pl. of ʔuda'yu "injection-needle" 6b. /huʔu'x̣^oʔlsa/ pl. of hu'x̣^oʔlsa "to call s.o. outside", /ʔuʔu'ywa/ pl. of ʔu'ywa "middle (of a tree, canoe)" 6c. /ʔaʔuze'x̣kn/ "lonesome for a sweetheart" (ʔuz-) 6d. /ha'wata/ pl. of hu'ta "to leave, to depart", /ha'wadm/ pl. of hu'dm "person who is left behind", /hawa'diʔa/ pl. of hu'diʔa "to leave s.b. behind", /ʔwaʔla'ls/ "forest" pl. of ʔuʔla'ls "bottom of tree, anything standing upright", /ʔ'waʔdi/ "feelings" (ʔu-), /ʔwaʔina'/ pl. of ʔuʔina' "shoulder", /ʔwa'mya/ pl. of ʔu'mya "cheek" 6e. /h'yx̣^ola/ pl. of hu'x̣^ola "call, invitation"

3.5

Vowel-insertion or -lengthening/-doubling

- 1) $C_1C_2 \rightarrow C_1aC_2$

Examples: /maxa'p/ "boxing" (mx-, cf. mxa "to hit"), /mala'ci/ "electric light" (ml-, cf. mla "to shine a light"), /q^oas/ "timber, group of trees within a larger group" (q^os-)

- 2) $C_1NC_2 \rightarrow C_1aaNC_2$

Examples: /ʔaa'ng^oala/ "fog on land" (ʔnq^o-, cf. ʔ'nq^oa "to look for a shady spot"), /ʔaa'mlala/ "dance performed at the beach at the arrival of people from other villages for a potlatch" (ʔmʔ-, cf. ʔ'mʔa "to play")

At this place two other instances of vowel-doubling need to be mentioned due to a shift of stress. In both cases the doubling takes place in a separate word (mas) that functions as a suffix in these instances, so doubling here can be considered as a special case of 2) h.1. $C_1VC_2 \rightarrow C_1VVC_2$: /himaas/ pl. of hi'mas (hi- + mas) "chief, king", /umaa's/ pl. of ʔu'mas (ʔu- + mas) "big".

- 3) In several cases vowel-lengthening is the result of insertion of ʔ behind the vowel/nasal of the root cf. /ya'ʔxa/ pl. of ya'xa "to give away, potlatch", /qu'ʔk^oila/ pl. of qu'k^oila "to build a house", /qoʔq^oane'/

pl. of qoq⁰ane' "cradle", /gu'ʔq⁰ug⁰i/ pl. of gu'g⁰i "leg", /hmʔgila'/ pl. of hmgila' "to cook".

Insertion of ʔ is often used for the plural-formation of already reduplicated words e.g. /daʔsdig⁰na's/ pl. of dasdig⁰na's "baby duck", /laʔlaka'p/ pl. of lalaka'p "canoe-race", /ǰ⁰aʔǰ⁰lx⁰bala'/ pl. of ǰ⁰aǰ⁰lx⁰bala' "half-deaf person", /yaʔyaksta'/ pl. of y⁰aksta' "anything ugly", /daʔda'la/ pl. of dada'la "to grab, to accept, receive".

4) C₁a/iC₂ → C₁a/iʔiC₂

Only three roots of words with a frequent occurrence form their plurals in this way: /ʔi'ʔix/ pl. of ʔix (ʔik-) "good", /ya'ʔix/ pl. of yax (yak-) "bad". Several derivatives of the roots ʔik- and yak- show the same plural-formation. /ni'ʔix/ pl. of nix "to say" cf. ya'kili ni'ʔikilya? "Do they say that he is sick?"

5) An exceptional case is /gu'ʔi.x⁰/ pl. of gux⁰ "house".

x) Thanks are due to Mrs. L. Barbetti of Kitimat B.C. for her valuable information on the language and to the Netherlands Organization for the Advancement of Pure Research which supported the author's research on Haisla.

xx) Cases like /ʔlxʔ'lkə/ could also be classed under type T₂ as total reduplication of a root ʔlk- (q⁰nk-) in which case we would not have x-insertion but the plosive-fricative change mentioned in 3.51.