Root-expansion in Haiala

Hein Vink, University of Leiden

3.1 Root-expansion in Haiala comprises reduplication and root-vowel expansion, the latter consisting of special cases with initial h-/θ- 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 a act or situation
   d) lexicalized forms

Reduplication as a separate means to express distribution is relatively rare in Haiala. 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.

3.3.1 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'ylakə/ pl. of ce'yllə "to use s.th." (sək-))
   - Initial lateral consonant changes into l-/ in second syllable. Roots of the type CVC generally reduplicate with l- in second syllable, roots of the type CVC with l- in second syllable (as in /li'lkanə/ pl. of lə'kəni "old lady" resp. /yu'ilta/ pl. of yu'ita "lane")
   - Plosive replaced by homorganic fricative (as in /x'mə'xə/ pl. of x'mə'xə "to be damaged")
   - Unrounded velar/uvalal alternating with rounded one (as in /cxə'/ pl. of ce'ə "short")
   - Labialization of velar/uvalal after u e.g. in several cases with x-insertion (as in /kə'xə'xə/ "strawberry" from a root ʒəl-) is automatic.

3.3.2 The meaning of the symbols in the following scheme is:
   P - partial reduplication
   T - total reduplication
   C - consonant
   V - vowel
<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
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<tbody>
<tr>
<td>$P_1^A$</td>
<td>$C_1 V$</td>
<td>$C_1 C_1 V$</td>
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<td>$C_1 x C_1 V$</td>
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<tr>
<td>$P_1^B$</td>
<td>$C_1 C_2$</td>
<td>$C_1 C_1 C_2$</td>
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<td>$P_2$</td>
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<td>$C_1 a s i C_1 V$</td>
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<td>$P_3$</td>
<td>$C_1 V C_2$</td>
<td>$C_1 V C_1 C_2$</td>
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<td>$C_1 N C_1 C_2$</td>
<td>$C_1 V C_1 C_2$</td>
<td>$C_1 V x C_1 C_2$</td>
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<tr>
<td>$T_1^A$</td>
<td>$C_1 V$</td>
<td>$C_1 V C_1 V$</td>
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<tr>
<td>$T_1^B$</td>
<td>$C_1 C_2$</td>
<td>$C_1 C_2 C_1 C_2$</td>
<td>$C_1 C_2 i s C_1 C_2$</td>
<td>$C_1 C_2 x C_1 C_2$</td>
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<tr>
<td>$T_2$</td>
<td>$C_1 V C_2$</td>
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</tbody>
</table>
### 3.33 Examples:

<table>
<thead>
<tr>
<th>C1C2C1V</th>
<th>/d'ad, ikn/</th>
<th>&quot;a.b. exhausted of laughing&quot; (da-), /du'x'son/ &quot;s.b. staring at someone else&quot; (duq-), /ia'k'ob'ia/ &quot;to train in sports&quot; (lok-), /oaq, x'da?e'yu/ &quot;lipstick&quot; (aoq-), /pap'le/ &quot;swallow&quot; (pal-), /zii'gla/ &quot;to calm down a child&quot; (ziq-), /qaapla's/ &quot;smokehouse&quot; (qap-), /qap'la'/ &quot;person in training, apprentice&quot; (qap-)</th>
</tr>
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<tbody>
<tr>
<td>C1C1V</td>
<td>/qapno's/</td>
<td>&quot;lakes&quot; (qu-), /qaapw'is/ &quot;pool&quot; (qu-), /uxwae'pit/ &quot;big rivers (distr.)&quot; (wa-)</td>
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</tbody>
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<tr>
<th>C1C2</th>
<th>/o'g'n'm/</th>
<th>&quot;women&quot; (gx-), /bbla'kha'y/ &quot;continuous nose-bleeding&quot; (blk-), /tta?x'swa/ &quot;to scratch at the door&quot; (tk-), /ska's/ &quot;spruce&quot; (sk-), /g'g's/ &quot;eye&quot; (gg-), /a'lxtam/ &quot;absent-minded&quot; (al-), /x'o'ldzwa'/ &quot;volcano&quot; (x'lt-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1C1C2</td>
<td>/bi'bxa/</td>
<td>pl. of bxa &quot;to make laces out of skin&quot;, /li'il'kani, pl. of lk'a'ni &quot;old lady&quot; (li-), /li'lxwala's/ pl. of lxwala's &quot;envelope&quot;, /qi'atkan/ &quot;fingerring&quot; (qt-), /si'snilm/ &quot;group of well-to-do people&quot; (sn-), /ti'pa/ pl. of tpa &quot;to fish&quot;, /k'ik'cem'pl/ pl. of k'cem&quot; (k's-) &quot;stamp&quot;, /xi'xsa/ pl. of xsa &quot;to disappear from view&quot;, /ci'ck'a/ &quot;people working with the ck'a, fishtrap that functions with the tide&quot;, /ni:nx'a'la/ pl. of nx'a'la &quot;near&quot;, /bi'bg'ann/ pl. of bg'a'nn &quot;human being, person&quot;</td>
</tr>
<tr>
<td>C1stC1</td>
<td>/gisi?q'ltxd/</td>
<td>pl. of q'ltxd &quot;tall (persons)&quot;, /wi'a'wlq/ pl. of wlq &quot;to get scared, to fear&quot;, /g'i'syem'w/ &quot;to fall over a log or rope, to stutter&quot; (gs-), /pi'snl/ pl. of nl &quot;thin (layer)&quot;, /m's'ma'/ pl. of mwa/ &quot;enough, full&quot;</td>
</tr>
<tr>
<td>C1C2, C1</td>
<td>/ka'kma/</td>
<td>&quot;humming-bird&quot; (kn-), /ba'bla/ &quot;jealous (sexually)&quot; (bl-), /ga'cnyu/ &quot;rope set as a trap&quot; (qn-), /qa'q'lk'o'/ &quot;snake&quot; (qlk-)</td>
</tr>
<tr>
<td>C1stC2</td>
<td>/pa'spli/</td>
<td>&quot;temples&quot; (pl-), /pa'sake/ &quot;islands (invisible)&quot; (pxk-)</td>
</tr>
<tr>
<td>C1C1C2</td>
<td>/lila'k'ila/</td>
<td>&quot;to ask a girl for intercourse&quot; (lk-), /lila'k'ala/ &quot;displaced persons (European immigrants)&quot; (lk-), /gi'ga'kwala/ pl. of ge'kwala &quot;to gossip&quot; (gk-)</td>
</tr>
<tr>
<td>C1C2, C1</td>
<td>/xa'walasila/</td>
<td>&quot;to perish (to die by losing consciousness)&quot; (xa-), /qaapila/ &quot;tweezers&quot; (qa-), /qaqala/ &quot;to adopt&quot; (qal-), /gagabmo'/ &quot;button-blanket&quot; (go-), /ga'ga'p/ &quot;father, grandparent&quot; (gp-), /kaka'dikayu/ &quot;deadfall without a bait&quot; (kt-), /sayaxsma'/ &quot;to play pool&quot; (sk-)</td>
</tr>
<tr>
<td>C1, C2C1</td>
<td>/q'x'o'yu'do's/</td>
<td>&quot;underbrush&quot; (q'o'-) Exceptional case.</td>
</tr>
</tbody>
</table>
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 $C_{1VC_2}$.

$C_{1NC_2}$

$C_{1UC_2}$

- /ta'ticila/ "mine" (tas-), /dudx'cw/ "to spy" (duq-), /k'ok'i'sa'/ "to peep" (k'iq-)

$C_{1VC_2}$

- /xu':xok'iza/ "tallow" (xuk-), /mi':m'k/ pl. of mi'la "to miss a shot", /qi'x?id/ pl. of qi'x id "to lie"
C₁V...→C₁VC₁V: /da'la/ "to grab, to accept, receive s.th." (da-), 
/ˈpapa'xiwa/ "to put a boardwalk on" (ra-), /ˈlola gì/ "to fight" (le-), /ˈk0 ˌi ˌdala ˈe/ "the way things go, 'method'" (q0i-), /la'la/ "to go upstream" (le-)

C₁C₂...→C₁C₂C₁C₂: /ˈkɪs}/xɕ/ pl. of cx "short", /ˈpliŋ/ pl. of pl "a mutual way of addressing of sisters-in-law", /ˈtʃa ˈe/ pl. of tgi."ta (tk-) "to put down a sack with content", /ˈkɪt ˈqta/ "s.th. that goes in and out, pocket-knife" (ct-), /ˈkqbiˈa/ "sand" (qbp-), /ˈkli ˈqyud/ pl. of qi."qyud (qlc-) "to put oil in one's hair", /ˈklil ˈwa/ pl. of qi."wa (ql-) "deep (plate)”, /ˈmɪnəcə/ pl. of m'nca "to measure, to interrogate", /ˈk0 ˌxq ˈa/ "big kind of woodpecker with bright red feathers under the wings" (k0q-), /ˈtʃn ˈnə/ pl. of ˈtʃn "to blow one's nose", /ˈeənˈma/ "beard" (ws-), /ˈkʊʃqˈlə/ "unmarried young woman" (ʔk-)

→C₁C₂isC₁C₂: /ˈlɪnˈluˈd/ pl. of ˈluˈd "to anaesthetize"

→C₁C₂xC₁C₂: /ˈlɪxˈlɪka/ pl. of ˈlɪka "convulsions, someone who is prone to fainting", /ˈk0ˈnxqˈnka/ "fallen tree that is crushed to pieces" (q0n-)

C₁VC₂...→C₁VC₁VC₂: /ˈhəˈʃaˈsə/ "to breathe" (has-), /wiˈsəwiˈa/ "unmarried young man" (wis-), /ˈtʃəˈxəjliˈjə/ "sickly person" (yak-), /ˈtʃiˈʔiˈkə/ "to swing a hammer" (ʔik-), /ˈk0ˈkəɪˈka/ "continuous winking" (k0k-), /ˈkʊˈxəkʊˈkə/ "to jerk" (kuku-), /ˈkʊˈqəkʊˈqə/ "to keep pulling" (kuq-)

C₁NC₂...→C₁NC₁NC₂: /ˈkəxˈməˈkə/ "to hop on two feet, to leap" (κmko-), /ˈkəmsˈhə/ pl. of ms "thick (layer)”, /ˈkəplˈkəbə/ "doorknob" (kpl-)

/ˈkəxˈməˈkə/ pl. of ˈkəˈmə "to be damaged", /ˈkəlˈqəqˈləˈsə/ "hospital" (qk0-), /ˈkəxˈməˈqə/ "to hop on one foot" (qm-)

C₁VC₂...→C₁VC₁VC₂: /ˈkətˈkəs/ "group of trees lying on the ground" (ket-), /ˈduˈsdəmu/ "numb (leg)" (dus-), /ˈqaˈpəpˈsa/ "to tidy s.th. up" (qaq-), /ˈk0ˈaˈkəˈlə/ "to order s.th. by mail" (q0a-)
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:

/\text{čxwtxwtxw}/ "to keep on working" (\text{čx} "to work"), /\text{qaxqaxqax}/ "to keep opening" (\text{qax} "to open"), /\text{ququququ}/ "to keep howling" (\text{qu} "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:

/\text{hmxmx}m/ pl. of \text{hmxm} (\text{hm}-) "table", /\text{hlxlnlxlnlx}/ pl. of \text{hlxlnlxlnlx} (\text{hlx}-) "killerwhale, blackfish". Completely irregular is /\text{hcmcm}cm/ pl. of \text{hcmcm} (\text{hm}-) "utensil for eating, fork".

3. An irregular non-productive type is \( \text{C}_2 \text{C}_2 \rightarrow \text{C}_1 \text{C}_1 \), the only examples being /\text{qnxnx}/ "necklace" (\text{q}-), /\text{qnxnx}/ "to stitch together" (\text{q}-).

4. A special case of reduplication may be considered the instances in which initial \( y \) prefixes \( \text{ha-}/\text{hi-}: \)

/\text{hawmhn}ma/ "to work on s.b.'s nerves" (\text{wa} "to be fed up with s.th., to be bored of s.th./s.b.", /\text{hawmhn}ma/ "to 'ghost', scare s.b." (\text{wl} "to get scared, to fear"), /\text{hawmhn}ma/ "to be thirsty" (\text{na} "to drink"), /\text{hawmhn}ma/ "to prank" (\text{wa} "crazy, insane"), /\text{hawmhn}ma/ "to overdo s.th." (\text{ya} "to do"), /\text{hawmhn}ma/ "slaying of a group of people" (\text{ya} "to hit"), /\text{hawmhn}ma/ "to go up the river" (\text{ya} "to ride the river upwards").

3.4 **Special cases with initial \( h/-\text{q} \)-**

The majority of instances with initial \( h/-\text{q} \)- behaves regular i.e. according to different reduplication-types as rendered on p.2. In the following survey all different cases with initial \( h/-\text{q} \)- 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. \( h_C \rightarrow h_C (C_{11C_{12}}) \)
   \( C_{12} \rightarrow h_C \)

b. \( C_{12} \rightarrow a_C \)

c. \( h_C \rightarrow h_C \)

d. \( h_C \rightarrow h_C \)

e. \( h_C \rightarrow h_C \)

f. \( C_{12} \rightarrow C_{12} (C_{1C_{21C_{22}}}) \)

Examples:
la. /hi'n'm/ pl. of h'n'm "song, record", /?i'ni's/ pl. of ?ni's "auntie"  
1b. /?a'nyq/ pl. of ?a'nyq "to look for a shady spot"  
1c. /ha'yx/ pl. of h'yx "inner bark of a cedartree"  
1d. /?i'me/ pl. of ?me' "small", /?isi'mis/ "both sides of the valley"  
1e. /?i'1ka/ pl. of ?i'1ka "finished, stop"  
1f. /'nX'qo/ "fog on ocean" (/?q'o-)

2) a. /haC_{12} \rightarrow h_C \)
   \( a_C \rightarrow a_C \)

b. /haC_{21} \rightarrow h_C \)
   \( a_C \rightarrow h_C \)

c. /haC_{21} \rightarrow h_C \)
   \( a_C \rightarrow h_C \)

d. /haC_{21} \rightarrow h_C \)

e. /haC_{21} \rightarrow h_C \)

f. /h_C \rightarrow h_C \)

Examples:
2a. /hi'a'skn/ pl. of ha'skn "out of breath", /hi'a'xg/ pl. of ha'xg "poor", /hi'a'qo/ pl. of ha'qo "rope", /hi'a'sla/ pl. of ha'sla "to smell"  
2b. /?i'a'galal/ pl. of ?a'galal "to answer", /?i'a'maka/ pl. of ?a'maka "first", /?i'a'l.mskala/ pl. of ?a'l.mskala "to make a joke", /?i'a'l.a/ pl. of ?a'l.a "to join in for the first time (e.g. in an organisation)", /?i'a'l.a/ pl. of ?a'l.a "back side"  
2c. /ha'was/ pl. of ha'was "lumber that is well dressed and seasoned", /ha'ya/ pl. of haya'p "to play hide and seek", /ha'ya/ pl. of haya'p "to hide (oneself)", /?a'x'a/ pl. of ?a'x'a "to skim off", /?a'l.xdyut/ pl. of ?a'l.xdyut "newcomer"  
2d. /ha'was/ pl. of ha'was "lumber that is well dressed and seasoned", /ha'ya/ pl. of haya'p "to play hide and seek", /ha'ya/ pl. of haya'p "to hide (oneself)", /?a'x'a/ pl. of ?a'x'a "to skim off", /?a'l.xdyut/ pl. of ?a'l.xdyut "newcomer"  
2e. /ha'shesa/ "to breathe" (hesh-)  
2f. /ha'yisa/ pl. of ha'yisa "arm"  
2g. /?a'qa/ pl. of ?a'qa "to come, to arrive"
3) a. $hiC_2 \rightarrow hi?C_2$ ($hihC_2$) $(C_{1}UC_{1}C_{2})$
   $hiC_2 \rightarrow ?iC_2$
b. $?iC_2 \rightarrow ?iC_2$ $(C_{1}UC_{1}C_{2})$
c. $?iC_2 \rightarrow ?a?iC_2$ $(C_{1}aC_{1}C_{2})$
d. $hiC_2 \rightarrow hayaC_2$
   $?iC_2 \rightarrow ?hayC_2$/?yaC_2$
e. $hiC_2 \rightarrow hyaC_2$

Examples:

4) a. $heC_2 \rightarrow hyeC_2$
   $?eC_2 \rightarrow ?yaC_2$
b. $heC_2 \rightarrow hi?eC_2$

Examples:
4a. /hye'?it/ pl. of /?e'ita/ "beautiful", /hye'?me/ pl. of /?e'me/ "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?ma/ pl. of /?e'laq?ma/ "to underestimate one's neighbour", /hi'e'lux?/ pl. of /?e'lux?" dancer's headress"

5) a. $?oC_2 \rightarrow ?yuC_2$
b. $?oC_2 \rightarrow ?i'oC_2$ $(C_{1}IC_{1}V)$

Examples:
5a. /?o'yun/ pl. of /?o?op/ "father", /?o'yulm/ pl. of /?o'lm/ "toy" 5b. /?i'o'mac?ila/ pl. of /?o'mac?ila/ "to work hard", /?i'o'?x?laci/ pl. of /?o'?x?laci/ "quiver, packsack"
6) a. huC₂→hu?uC₂ \( (C_1VC_1C_2) \)
\( \nuuC_2\rightarrow\nuuC_2 \)
b. huC₂→hu?uC₂ \( (C_1VC_1V) \)
\( \nuuC_2\rightarrow\nuuC_2 \)
c. \( \nuuC_2\rightarrow\nuuC_2 \) \( (C_1C_1V) \)
d. huC₂→hu?uC₂
\( \nuuC_2\rightarrow\nuuC_2 \)
e. huC₂→hu?yC₂

Examples: 6a. /hu?sa/ pl. of hu'sa "to count", /\nu?d'yu/ pl. of \nu'd'yu "injection-needle" 6b. /hu'?u'o?lsa/ pl. of hu'?u'o?lsa "to call s.b. outside", /\nu?yuwa/ pl. of \nu'yuwa "middle (of a tree, canoe)" 6c. /\nu'uze'?xun/ "lonesome for a sweetheart" (\nu?-) 6d. /ha'weta/ pl. of hu'ta "to leave, to depart", /ha'wad'/ pl. of hu'dm "person who is left behind", /hu'udi'a/ pl. of hu'udi'a "to leave s.b. behind", /\nuw?xla'ls/ "forest" pl. c. \nu?x?xla's "bottom of tree, anything standing upright", /\nuw?xdi/ "feelings" (\nu-), /\nuw?xina'/ pl. of \nu?xina' "shoulder", /\nu?w?nya/ pl. of \nu?w?nya "cheek" 6e. /hu'?x?la/ pl. of hu'?x?la "call, invitation"

3.5 Vowel-insertion or -lengthening/-doubling

1) \( C_1C_2\rightarrow C_1\nuC_2 \)
Examples: /mxa'/ "boxing" (mx-, cf. mxa "to hit"), /mela'ci/ "electric light" (ml-, cf. mla "to shine a light"), /q?as/ "timber, group of trees within a larger group" (\nu's-)

2) \( C_1\nuC_2\rightarrow C_1\nuC_2 \)
Examples: /\nu'a?n?x0ala/ "fog on land" (\nuq0-, cf. \nu'?n?x0e "to look for a shady spot"), /\nu'a?mlala/ "dance performed at the beach at the arrival of people from other villages for a potlatch" (\nu?m-, cf. \nu'?n?x0a "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.l. \( C_2\nuC_2\rightarrow C_1\nuC_2 \):
/hinea's/ pl. of hi'mes (hi- + mas) "chief, king", /\nu'maa's/ pl. of \nu'mas (\nu- + mas) "big".

3) In several cases vowel-lengthening is the result of insertion of ? behind the vowel/nasal of the root cf. /ya'?xya/ pl. of ya'xa "to give away, potlatch", /\nu'k0ila/ pl. of \nu'k0ila "to build a house", /\nu?\nu0ana/
pl. of qaq'ane' "cradle", /gu'q̓ o'ug̓ i/ pl. of gu'q̓ i "leg", /hm̓ gila'/ pl. of hm̓ gila' "to cook".


4) C₁a/iC₂→C₁a/iC₁C₂

Only three roots of words with a frequent occurrence form their plurals in this way: /ʔi'li'ix/ pl. of ʔix (ʔik-) "good", /ya'li'ix/ pl. of ya'x (ya-k-) "bad".

Several derivatives of the roots ʔik- and ya-k- show the same plural-formation. /ni'li'ix/ pl. of nix "to say" cf. ya'kili ni'likilya? "Do they say that he is sick?"

5) An exceptional case is /gu'q̓ u'lə/ pl. of gu'g̓ o "house".

x) Thanks are due to mrs. L. Barretti 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 /ləl̰k̰'ıka/ could also be classed under type T₂ as total reduplication of a root ʔik̰- (q̓ o-ʔk̰-r-) in which case we would not have x-insertion but the plosive-fricative change mentioned in 3.31.