Look out for number one, kid: An exercise in Lillooet morphology

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The complexity of Lillooet morphology can often be demonstrated through a single root which then allows a multitude of derivations, employing a variety of morphological operations. In the present article we select the root pála? 'one' which allows a total of 36 derivations, through various types of affixation and reduplication, plus combinations thereof, and compounding. All listed derivations are commented on with regard to their morphological structure and, where available, are illustrated with example sentences drawn from my Lillooet corpus. Implications of this material for linguistic typology and theoretical analysis are offered in the concluding section.

1 Introduction

Like all Salish languages, Lillooet (St'át'imcets) has a large and complex morphological repertoire, which includes prefixation, infixation and suffixation, various forms of reduplication, compounding, and the unproductive process of apophony. These operations may also occur in a wide variety of combinations, the locus and ordering of which is discussed in detail in Van Eijk 2004. A brief excursus on the various morphological operations employed by Lillooet follows, together with the typographical devices used to signal these operations. A fuller description of Lillooet morphology is given in Van Eijk 1997, to which I refer the interested reader (with the caveat that instead of the various typographical devices listed below, Van Eijk 1997 only employs hyphens or, in the case of internal changes, does not indicate morpheme boundaries).

Prefixation is limited in relation to suffixation, but it contains a number of highly important markers, such as the nominalizer s-, and the 'locative' suffix n- which indicates that the referent of the root is placed in a larger setting. Prefixes are indicated with a following hyphen in isolated quotations (as in the two cases just quoted) but with a following period in full words, as in s.k^wzús-əm 'job, work (noun),' (southern dialect) from k^wzús-əm 'to work.'

The only infix employed by Lillooet is the inchoative marker ?, indicated with a high dot, as in $\sqrt{\gamma}$ for raise, grow (persons, horses, trees, etc.)' > γ i?p 'to grow, grow up.'

Suffixes are signalled with a preceding hyphen, as in k^wzús-əm above (with the intransitivizing suffix -əm). The largest subset of suffixes is formed by so-called lexical suffixes which in general indicate an object or area to which the referent of the root applies. Hinkson 1999 provides an in-depth survey of Salish lexical suffixes, based on a large number of sources on individual Salish languages, and on original field work.

Reduplication falls into three major (productive) types and a number of unproductive types. The three major types, with their typographical encodings are the following:

CVC reduplication (labeled 'total reduplication' in Van Eijk 1997), i.e., reduplication of the first CVC sequence of the root. This type signals the augmentative (plural/collective in nouns, repetition/intensity in verbs) and it is indicated with a colon following the CVC copy. Stress may fall on the CVC copy or on the root, according to a phonologically largely predictable pattern, as expained in Van Eijk 1997:65. The CVC copy or the targeted CVC sequence in the root usually have their vowel reduced to **ə** when they are unstressed. Examples are **s.qayx**^w 'man' > **s.qáy:qyəx**^w (via ***s.qáy:qəyx**^w) 'men,' **s.mú4ac** 'woman' (northern dialect) > **s.mə4:mú4ac** 'women.' For a detailed discussion of CVC reduplication in Lillooet, and in Salish in general, I refer the reader to Van Eijk 1998a.

Consonant reduplication (C-reduplication for short), i.e., reduplication of the consonant before the stressed vowel and placement of the C copy after that vowel. This type signals the diminutive and it is indicated by two angular brackets enclasping the copy, as in s.pzu? '(wild) animal' > s.pzú<za>? 'bird' (literally 'wild animal,' with epenthetic a in the unstressed portion). In most cases, the stressed vowel is reduced to \mathbf{a} as part of the reduplicative process, as in $\mathbf{na}\mathbf{X}^{w}$ it 'snake' > $\mathbf{na}\mathbf{X}^{w}\mathbf{\hat{s}} < \mathbf{X}^{w} > t$ 'worm.' See, however, $\mathbf{pa} < \mathbf{p>la}$? and $\mathbf{pa} < \mathbf{p>la}$? in section 2 for two forms that are semantically distinguished by whether or not the stressed vowel is reduced to \mathbf{a} .

VC reduplication (labeled 'final reduplication' in Van Eijk 1997), i.e., reduplication of the consonant following the stressed vowel, with the consonant and its copy separated by \mathbf{a} , unless the copy itself is followed by a vowel. This type signals an ongoing process, usually one leading to a certain result, and it often implies a lack of control. It is indicated with the equal sign preceding the consonant copy or, where applicable, the copy and preceding \mathbf{a} , as in $\sqrt{pu4}$ 'to get boiled' > $pu4=\mathbf{a}4$ 'to be boiling,' $s.\dot{\lambda}q^{w}$ -aw's 'together' (with stative prefix s-, homophonous with the nominalizer s-) > $\dot{\lambda}q^{w}$ -áw'=was 'to get together' (with epenthetic \mathbf{a} preceding final s, which then deletes the need for \mathbf{a} preceding the w copy). A general overview of VC reduplication in Salish is given in Van Eijk 1990.

In addition, there is the unproductive process of CV reduplication (labeled 'initial reduplication' in Van Eijk 1997), i.e., reduplication of the first consonant of the root, with a vowel following the consonant copy. Semantic functions vary, depending on whether the vowel following the consonant copy is identical to the vowel following the initial consonant of the root, or whether it is a different vowel, and on whether or not the vowel in the CV augment is stressed. Like CVC reduplication, CV reduplication is indicated with a colon, and an example is pála? 'one' > pi:pála? 'one at a time,' as detailed in section 2.

Compounding may be more productive than is suggested in Van Eijk 1997:54, but the number of available examples is limited. It consists of two roots, usually linked with a connective **a4** that is typographically preceded and followed by the plus-symbol (+), as in **pal?+a4+cítx**^w 'next-door neighbour,' see section 2.

Apophony is unproductive, and its single most striking example is $\sqrt{\gamma}$ (p-in' to raise, grow (persons, horses, trees, etc.), transitive (-in')' ~ s.yap 'tree,' ~ γ ϕ p- φ n 'to stand smt. up, transitive (- φ n).'

Clitics are indicated with an underloop that follows proclitics and precedes enclitics, as in ti_pál?_a 'the one (thing),' with the proclitic article ti, and the reinforcing enclitic a.

As an example of the reach of Lillooet morphological operations we present, in section 2, the root **pála?** 'one' with all its recorded derivations. All operations discussed in the above paragraphs are exemplified by **pála?**, except for infixation and apophony. Details on the presentation of **pála?** and its derivations are given in the opening paragraphs of section 2.

2 The root pála? 'one' and its derivations

In what follows we give first the word **pála?** in its root form, then the nominalized form **s.pála?**, then the derivations with lexical suffixes, followed by the one compound form involving **pála?**, then the forms with various types of reduplication, and finally **pál?-upst** 'eight,' where we are dealing with a different numeral (though one derived from **pála?**). The alphabetical order of forms with lexical suffixes is the one that is explained in Van Eijk 1997:77,261, going from labials to laryngeals.

The word **pála?** and its derivations start flush left, except for secondary derivations which are introduced with an m-dash and are listed under the form from which they are derived. A double pipe, ||, introduces morphological comments and other pieces of information. A colon after the year of publication of a reference (e.g., Kuipers 2002:217) indicates the relevant page number in that source, while a slash (e.g., Van Eijk 1997/9) indicates a numbered section (encompassing several pages) in that source. The symbol 'M' indicates the southern (or Mount Currie) dialect, while 'F' indicates the northern (or Fountain dialect). Forms not marked by either symbol are identical for both dialects.

Where available, example sentences (drawn from my corpus of Lillooet data) are provided for each derivation. A detailed analysis of these sentences falls outside the parameters of this article, although readers familiar with Van Eijk 1997 will recognize many of the morphemes used in these sentences. A Lillooet dictionary, listing all recorded roots and bound morphemes, and most derivations, is in preparation (Van Eijk, in prep).

- pála? 'one (object):' ti pál? a s.qit, ti pál? a s.ná:natx^w ?ácx-n-əm, plan wa? n.kətx^w-ús 'one day, one morning he was found (literally, "seen") with his head cut off;' s.?ístkn a lá.k^wu?, wa? lá.k^wu?
 pala? k^wú? Xu? ?iż k^wu ?úx^walmix^w 'there was this one group of people living together in an underground house over there;' pála? Xu? ?iż k^wu ?úx^walmix^w lá.k^wu? k^wa ?əs.cítx^w lá.k^wu?
 s.?ístkn a 'this one group of people was living in an underground house over there.' || The numeral pála? is of Central Salish origin and attested for Comox, Twana, Quinault, Lower Chehalis, Siletz and Tillamook, with subsequent borrowing into Lillooet and Thompson (Kuipers 2002:217).
- s.pála? 'one time,' only recorded with the third person possessive suffix -s in the expression na,s.pála?-s,a 'once:' húỷ-4kan núk^w?-an-ci-n, ni4 t,s.nuk^w?-an-c-ax^w,a,tú?,a na,s.pála?-s,a 'I will help you, because you helped me once.' || s- nominalizer, Van Eijk 1997/9.
- pəl?-ám 'one row (e.g., of potatoes).' || -ám 'row' (recorded only with numerals and numerical substitutes), Van Eijk 1997:78.
- pál?-ac 'to eat by oneself.' || -c 'mouth, food' (with regular morphophonemic variant -ac in this form), Van Eijk 1997:81. The form pál?-ac is rejected by some speakers in favour of pal?-acín (see below).
- pál?-ac-miň 'to eat s.t. by oneself, tr.:' pal?-ac-miň-as tú? , va? 'he ate it all by himself;' plán , va? 'ama k^w s.pal?-ac-miň-as , va? , caq^w-aň-ás , va? , va? 'ama k^w s.pal?-ac-miň-as , va? , va?
- pal?-acíň 'to eat by oneself.' || -acíň 'to eat,' Van Eijk 1997:82.
- pal?-acín-min 'to eat s.t. by oneself, tr.:' pal?-acin-min-ás tu? Xu? nə4 s.cq-áp a 'he ate the mashed berries by himself.' || -min 'relational' transitivizer, Van Eijk 1997/18.
- n.pál?-us 'single, one single thing:' wá? , Åu? n.pál?-us ti s.Åp-íwan-s a 'he's

only got a shirt on.' || **n-..-us** '-fold,' a combination of the locative prefix **n**- and the suffix -**us** 'face, front, head, appearance,' Van Eijk 1997:82.

pál?-us-əm 'one group of people (family, tribe, etc.):' pal?-us-əm ?íź Xu? k^wu ?úx^walmix^w 'they are from the same family.' || -us-əm 'kind, sort,' a combination of -us 'face, front, head, appearance' and either the intransitivizer -əm or its homophonous aspectual suffix, Van Eijk 1997:82.

pal?-ásqat 'one day.' || -asqat 'day,' Van Eijk 1997:84.

- pal?-aszánux^w 'one year, one year old:' ni pal?-aszánux^w a 'one year before (the last year), two years ago.' || -aszanux^w 'year,' Van Eijk 1997:84.
 - pal?-aszá<ż>nux^w 'one year old animal.' || Combination of -aszanux^w (see preceding item) and consonant reduplication, here signalling the category 'animal(s).' Resonant-glottalization (in this case applied to z) is a feature of many, but not all, cases of consonant reduplication involving resonants.
- pál?-usa? 'one piece of fruit, potato, dollar.' || -usa? 'round object, fruit, money,' Van Eijk 1997:83.
- pal?-a4q^wáwt 'one group of people (e.g., people walking together, or relatives):' pal?-a4q^wawt-kálap 'you folks are one group.' || -a4q^wawt 'group of people,' recorded only with pála?, Van Eijk 1997:100.
- pál?-i4aź 'one tree bush, plant.' || -i4aź 'tree, bush, plant' (used mainly with numerals), Van Eijk 1997:86.

pal?-úlmax^w 'one spot:' q^wacác k^wu? múta? píxam, ?úl=lus-n-as ?i ćí? a l ti pal?-úlmax^wa, ni⁴ s.zúq^w-s-as tákam 'he went out hunting again, he gathered the deer in one spot, and he killed them all.' || -úlmax^w 'earth, land, soil,' Van Eijk 1997:87.

pál?-alc-əm, pál?-alc-ən 'to visit people, intr., tr.:' cíx^w-kax^w ha pál?-alc-əm 'did you go for a visit?' || -alc 'house,' Van Eijk 1997:87; -əm intransitivizer, -ən transitivizer, Van Eijk 1997/18.

- pal?-alíkst 'one sheet (of paper).' || -alikst 'sheet,' Van Eijk 1997:89.
- pál?-alq^w 'one cylindrical object (tree, log, stick):' pál?-alq^w lá.ti? ti s.yáp a 'that tree is standing by itself;' pál?-alq^w lá.ti? ti calis-áż a 'that cherry tree is standing by itself.' || -alq^w 'cylindrical object,' Van Eijk 1997:90.
- pál?-ulwi4 'one container, conveyance (bottle, canoe, car, etc.):' pal?ulwí4 , xu? ti_n.slam-álh_a 'I have just one bottle;' pal?-ulwí4 , xu? ti_n.wákn_a 'I have just one wagon.' || -ulwi4 'conveyance, container,' Van Eijk 1997:97, with the main semantic function borne by -wi4, which combines with the connective -ul.

pala?-qíń 'one year old buck.' || -qiń 'head, antler,' Van Eijk 1997:94. See

also next item.

- pal?-á<?>qa? id. as pala?-qín (preceding item). || Combination of -aqa? 'spike, gunbarrel, slender cylindrical object' (Van Eijk 1997:93) and consonant reduplication, an operation without which -aqa? does not appear in any of its recorded occurrences.
- pal?+a4+cítx^w 'next-door neighbour:' húỷ-4ka4 lá.ti? da?, ní4 Xu? s.wáżam-s ti s.qá<q>X? a lá.k^wu?, cúwa?-s ?i pal?+a4+cítx^w a ?á.k^wu? s.d^wút-ka4 a 'we were just about to eat when the pup of our nextdoor neighbours barked.' || Rejected by some speakers as a possible confusion with pal+a4+cítx^w 'stranger.' However, the form pal?+a4+cítx^w (citx^w 'house') makes perfect morpho-semantic sense, and it was also recorded in a story by Rosie Joseph, whose knowledge of her language was beyond suspicion.
- pála? 'one person:' ?i,xín'-as, wá?,k^wu? ta_pál?_a s.qayx^w, ta_s.əm?ám-s_a, n.kə:ka4ás ?i,s.cm-ált-s_a, l.k^w?ú-na n.x^wís-tn_a 'a long time ago, there was this one man, his wife, (and) his three children, over there at n.x^wís-tən (Bridge River).' || Consonant reduplication, which signals the category 'person(s)' in pála?, Van Eijk 1997/19.
- pala?-sút 'to be all by oneself.' || -sút 'out of control,' Van Eijk 1997:103.
- pə́la? 'one animal:' pút ha k4 tákəm-4ka4 ras s.zaxən-s-táli k^wu pə́la? Xu? či? 'do we really all have to go to pack one deer?' || Consonant reduplication in combination of the change of the stressed vowel to ə́, which signals the category 'animal(s)' in a the numerals 'one,' 'three' and 'five,' Van Eijk 1997/19.
- n.pá<pə>l?-aq^w 'one egg.' || Also one of the author's nicknames, based on the phonetic similarity between 'one egg' and 'Van Eijk.' The combination of the locative suffix n- and the suffix -q^w 'head, animal' signals the category 'egg(s)' on numerals that are already marked (through consonant reduplication) for the category 'animal(s),' Van Eijk 1997/19.
- pál=la? 'to come together, to get together (e.g., people, or two rivers at a confluence):' pál=la? ?i,?ux^walmíx^w,a 'the people got together.' || VC reduplication, as explained in the Introduction.
- pi:pála? '(to do) one thing at a time:' pi:pála?, Xu? k^wən, cíx^w 'I go once in a while.' || Reduplication of the first consonant of the root plus i, signalling 'X number of times' and limited to pála? and ?ánwas 'two,' Van Eijk 1997:58, 131.
- pi:pál?-usa? '(to take, eat, etc.) one piece of fruit at a time.' || -usa? 'round object, fruit, money,' Van Eijk 1997:83.
- pi:pál?-alq^w '(to handle) one stick, log, etc., at a time.' || -alq^w
 'cylindrical object,' Van Eijk 1997:90.

- pi:pála? 'one by one, one at a time (people).' || Combination of Cireduplication (see under pi:pála? above) and consonant reduplication (see under pála? above).
- pál?-upst M 'eight.' || -upst formative, found only in this numeral but possibly related to -ups 'tail,' Van Eijk 1997:78. For the derivation of 'eight' from 'one' see also Shuswap, as discussed in Kuipers 1974:56.
- n.pál:pəl?-upst M 'eight persons.' || Combination of the locative prefix n- and CVC-reduplication, signalling the category 'person(s)' in a number of numerals, Van Eijk 1997/19.
- pəl?-ú<?>pst F (A) 'eight (objects);' (B) 'eight animals.' || Unexplained stress shift to the vowel of the suffix, in combination with consonant reduplication, here signalling both object(s)' and 'person(s),' Van Eijk 1997/19.
- n.pəl:pəl?-ú<?>pst F 'eight persons.' || See n.pál:pəl?-upst above for the expression of 'person(s).'

3 Conclusions and acknowledgements

As the above sections should make clear, Lillooet, like all Salish languages, employs a wide range of morphological operations which first of all have great inherent value as an example set of how intricate the wedding of semantics to formal expression can be. In the second place, these operations provide a wealth of material for both typologists and linguistic theoreticians, who on the one hand will find a mass of information in a language like this to add to their data base of cross-linguistically compared morphological operations, while on the other hand they will be able to use this material for testing the validity and strength of their theories. For example, the type of stress-based reduplication that we find in cases like pála? or pál=la? is very highly marked among the world's languages and as such is of profound interest to typologists, especially where such reduplication leads to the insertion of material from one morpheme into another, as in pal?-á<?>qa? or pal?-ú<?>pst.

Of recognized importance to theoreticians is the question of whether reduplication is a form of affixation (as argued in, for example, Marantz 1982) or an internal process, more akin to, say, apophony or subtraction (as in French [vært] 'green (feminine)' > [væ:r] '*id.* (masculine)'). Although Van Eijk 1998a still argues for classing CVC reduplication as affixation (be it within the root-contour), Van Eijk 1998b rejects this and provides arguments for classing

CVC reduplicaton and other forms of partial reduplication as a non-affixing process. A recent theoretical account of reduplication and infixation, based on a wide sample of languages, including Salish, is Yu 2007. (Somehat oddly, Yu does not discuss Lillooet inchoative infixation, which leaves the question open whether a form like **?á?ma** 'cute, funny' (from **?áma** 'good') results from infixation of inchoative **?** or from consonant reduplication. It is the latter, but the fact that this insert may result from two different processes should be recognized, and typographically indicated—as **?á<?>ma** in this case. A related issue of theoretical interest is the fact that the inserts that result from consonant reduplication, because they are on the prosodic tier of the word, while the inchoative infix **?** is read off by CVC reduplication, because it is on the morphological tier, an issue explored further in Van Eijk 1993 and 1998a, with particular reference to Broselow 1983.)

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