

Origins of Salishan Lexical Suffixes

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1. **Lexical suffix: definition.** Lexical suffixes are a group of suffixes found in Salish, Chemakuan, and Wakashan which have semantic content analogous to specific nouns, but lack phonological similarity to them. In this sense, they are unlike what is usually perceived as derivational affixes, which more often have little concrete meaning, rather serving to identify lexical classes. Lexical suffixes have gone by several names: Sapir described them, rather than naming them, and called them "verbal affixes that refer to nouns" (1911:251/1989 [1990]:28); Reichard called them "nominal suffixes" (1938:601), Vogt used the term "field-suffixes" (1940:58), and Kuipers divided them into "somatic suffixes" (1967:120) and "non-somatic suffixes" (1967:125). The usage "lexical suffixes" was first used by Kinkade (1963:352), adopted from Vogt, who used this term, rather, for "a group of suffixes which modify the verb, by changing its syntactical functions or by adding various shades of meaning, as iteration, reciprocity, reflexivity etc." (1940:56). Kinkade made the change because of the semantic similarity between these suffixes and usual lexical items (i.e. nouns). The term is now in general use in discussing this class of affix in Salish, Chemakuan, and Wakashan studies. A small number of prefixes found in some Salishan languages are often referred to as "lexical prefixes", probably developed by analogy with lexical suffixes; I will not deal with these prefixes here.

2. **Use.** Lexical suffixes have simple basic meanings ('back', 'foot', 'house', 'water'). They may also have a variety of semantic extensions (for studies of these extensions see Hinkson 1995, 1996, forthcoming, Hinkson & Norwood 1997).¹ For example, in (1) the first lexeme in the gloss of selected Moses-Columbian² lexical suffixes is the basic meaning; all the others extend some part of the basic concept. These extensions are not always obvious, although they often have explanations from within the culture.

¹ It is worth noting that Tarascan, a language isolate in Mexico, has a similar set of suffixes, and they have similar semantic extensions (Friedrich 1969, 1972).

² Moses-Columbian and Upper Chehalis data are from my field notes and files except as noted. Sources of other data are indicated as being from the author cited, even though some of those data are, in turn, from elsewhere. These data are occasionally modified to accord with my own transcriptions and morpheme identifications. Abbreviations and symbols used are as follows: Be = Bella Coola, Ch = Upper Chehalis, Cm = Moses-Columbian, Cr = Coeur d'Alene, Cw = Cowichan (Halkomelem), Cx = Comox, Cz = Cowlitz, DC = Dog Creek dialect of Shuswap, Fn = Fountain dialect of Lillooet, Ka = Kalispel (includes Spokane, Kalispel, Flathead [Montana Salish]), Kl = Klallam, Ld = Lushootseed, Li = Lillooet, Lo = Lower Chehalis, Ms = Musqueam (Halkomelem), Nk = Nooksack, Nld = Northern Lushootseed, Ok = Okanagan, Pt = Pentlatch, Qn = Quinault, Sa = Saanich (Straits), Se = Sechelt, Sh = Shuswap, Sk = Skagit dialect of Northern Lushootseed, Sp = Spokane, Sq = Squamish, Th = Thompson, Ti = Tillamook, Tw = Twana; ABS = absolutive, ART = article, AUT = autonomous, C = consonant, CHAR = characteristic reduplication, CIS = cislocative, hither, CPD = compound link, DEF = definite, DIMIN = diminutive, DISTR = distributive plural reduplication, EXP = expansion suffix with lexical suffixes, FEM = feminine, FUT = future, IMPER = imperative, IMPF = imperfective aspect, INCH = inchoative, INSTR = instrumental, place, INTRANS = intransitive, LOC = locative, LS = lexical suffix, MDL = middle voice, N = noun, nominal, NOM = nominalizer, OBJ = object, OBL = oblique, O.C. = out-of-control reduplication, PL = plural, POSS = possessive, PROX = proximate, REFL = reflexive, REL = relational (a transitivizer), SG = singular, ST = stative, SUBJ = subject, to.NOM = to + nominalizer, TRANS = transitive, UNRL = unrealized, V = verb, verbal; * precedes lexical suffix; hyphens set off other affixes, / is used to separate a prefix from a root; otherwise roots are not marked, • marks reduplication, [] around a segment indicates that the enclosed material is infix, * non-occurring forms or proto-language form, | separates parts of compounds.

1. Cm =cin 'mouth, lips, language, edge, food, doorway, river mouth, shore, creek'
=us 'eye, face, opening, hole, road, fire'
=alq^w 'tree, log, board, pole, stick, scythe, rope, arm, cigarette, loaf of bread, person'
=ana? 'ear, temple, cheek, side of face, antler, corner, cover'
=ap 'base, lower end, foot, end, door, egg, rope'

These meaning extensions are not always the same from language to language, and the same English concept may end up being expressed by different suffixes in different languages. For example Upper Chehalis uses suffixes different from these for 'road', 'fire', 'door', and 'cover', and no suffix is recorded with the meanings 'corner', 'egg', or 'rope'. Meanings may become abstract and locative. Thus 'ear' may extend to 'upon, all over s.t.', 'eye, face' may become 'round object', 'canoe' may become 'container' or 'concave object', and the like.

Lexical suffixes follow a root or stem, either directly, as in (2), or following a limited number of suffixes, as in (3). The stem may also be reduplicated, as in (4).

2. Cm s/kəm=cín (NOM/surface=mouth,shore) 'mouth'
s-n/kəm=qín (NOM-LOC/surface=head) 'roof'
3. Cm xən'-p=cín (lay.flat-INCH=mouth) 'ice along the shore'
q^wiy'-t=úps (blue-STATE=tail) 'a small blue lizard'
n/wən-lx=átk^w (LOC/down-AUT=water) 'sink in the water'
4. Cm kʔ/q^wəí^w•q^wəí^w=xn (LOC/DISTR•slip=foot)³ 'lose footing on a frozen or icy hillside'
sək^w•sók^w-p=xn (DISTR•swell-INCH=foot) 'swollen feet'
paí^o•í^o=úí^oəx^w (fade•o.c.=ground) 'fine, powdery snow on the ground'
k^w•k^wi^oκ=xn (DIMIN•take.apart=foot) 'no shoes, barefoot'

More than one lexical suffix commonly occurs on a stem (for more on such combining see Kinkade 1973). In some such cases, the last suffix is added to a stem that already has a lexical suffix, as in (5).

5. Cm n/tiy=atk^w=əx^w (LOC/tall.grass=water=people) 'Entiat band'
pul•pul=qn=át^p (turn.over•CHAR=head=plant) 'thimbleberry bush'

In other cases, earlier suffixes tend to modify later ones to narrow down an area indicated in general by the later one; examples are given in (6).

- 6a. Cm kʔ/kəm=cín=xn (LOC/surface=mouth=foot) 'ankle'
n/kən=ap=ús=xn (LOC/take=base=face=upper.arm) 'hold s.o. by the arm'
cək•k=ap=áw's=qn (hit•o.c.=base=middle=head) 'he got hit on the mouth'
s/kən'p=qn=ús=kst (NOM/ring.around=head=face=hand) '(finger)ring'

³ Moses-Columbian has seven or so locative prefixes. I simply label them all LOC here.

- 6b. Be $\text{tq' = ank = us = utik = ak - m - cs}$ ti?imlk - tx
 slap=side=face=back=hand-MDL-he/me PROX/man-ART
The man is slapping the side of my face with the back of his hand. (Saunders and Davis 1975c:112)

Set combinations of lexical suffixes, often with specific prefixes, are frequently used for certain concepts. For example, in Moses-Columbian doors and gates are nearly always named by using the locative prefixes *kʔ-* and *n-*, the lexical suffix *-ap* 'base', and the instrument suffix *-m*, as in (7).

7. Cm $\text{kʔ - n / xən' = ap - tn}$ (LOC-LOC/lay.flat=base-instrument) 'door'
 $\text{kʔ - n / xəm = ap - tn}$ (LOC-LOC/long.object.project=base-instrument) 'rail gate'
 $\text{kʔ - n / t'p = ap - tn}$ (LOC-LOC/protrude=base-instrument) 'lock'

It should be obvious that lexical suffixes are ideally suited to word-building, and they are indeed so used extensively for acculturation vocabulary and lexical replacement, and for refining reference to parts of the body (and the like; Saunders and Davis 1974 shows how Bella Coola can refer to any part of the head using lexical suffixes).

The number of lexical suffixes in languages varies. Available lists show a wide range, from only 39 in Lower Chehalis (this low number is due to insufficiency of data) to 298 in Upper Chehalis (Kinkade 1991:342-364; this list gives suffixes with semantic differences as separate entries, however, so the actual number of basic suffixes is much smaller). Other high figures are ca. 134 in Thompson, ca. 127 in Shuswap, 126-157 in Lillooet, and ca. 135 in Squamish. These are fairly thorough lists; others do not include suffixes which occur rarely, or the status of which is unclear (nor has it been the aim of most grammars to include full lists). In addition, several expansions (see 7 below) of many suffixes occur, sometimes altering the basic meaning somewhat; these, and the compounding of suffixes, provide a potentially huge number of suffixes and suffix combinations.

2.1. Grammar. Lexical suffixes are usually equivalent to a lexical argument. Their meaning is often generic, rather than specific; thus there are suffixes for 'plant' or 'animal', although not for specific members of these categories such as 'strawberry' or 'muskrat' (although such specific terms may contain a lexical suffix). Because they are generic, they can be accompanied by a lexical argument that is specific, but very rarely one that has precisely the same meaning as the suffix (i.e., one would not say 'he hand-cut his hand'). They serve in several grammatical relations and thematic roles with the stem to which they are attached, as in (8) (all these examples are from Czaykowska-Higgins, Willett, and Bart 1996; agentive use appears to be uncommon, at least in Moses-Columbian).

8. Cm wəck = átx'
 fall.over=house
 The tipi blew over. THEME
- $\text{kʔ / ?əmt = ált t s / w'əna?x}$
 LOC/feed=child OBL NOM/huckleberry
 She fed the children huckleberries. GOAL

- $\text{kn t / k'əw - lx = álq'}$
 1SG.SUBJ LOC/climb-AUT=tree
 I climbed the tree. LOCATIVE
- $\text{yəŋ' = ákst - m kn}$
 force=hand-MDL 1SG.SUBJ
 I used a lot of force with my hand INSTRUMENT
- $\text{ləx' = cn - m = ált}$
 cry=mouth-MDL=child
 Someone's baby cried. AGENT

In the last example in (8), everything up to *-m* 'middle' is the stem to which the last lexical suffix is added. Many constructions with lexical suffixes can be transitivized, as in (9) (the first example is from Czaykowska-Higgins, Willett, and Bart 1996; third person objects and agents are zero).

9. Cm $\text{yəŋ' = xn - mi - s wa ?ací xX'út}$
 push=foot-REL-3SUBJ ? that rock
 He pushed that rock aside with his foot.
- pa?xán = xn - c
 step=foot-1SG.OBJ
 Someone stepped on my foot.

A few lexical suffixes are classificatory. The most obvious of these are the suffixes that are used only for counting specific objects or concepts. Thus Upper Chehalis *-aʃn* 'times' only follows numerals and quantitative roots meaning 'every', 'many', or 'how many?'. Other such counting forms are Upper Chehalis *-asti?* 'at a time', *-ix'* 'fathoms', *-s* or *-al-s* 'pole', *-t = tumš* 'tens', or Moses-Columbian *-alk* 'times', *-əm* 'each', *-maw's* 'layers'. Others classify specific categories or classes of things, notably *-n(i)t* in Upper Chehalis and *-atp* in Moses-Columbian, which designate plants, especially plants on which something usable grows. Upper Chehalis *-aq* or *-aq'* 'language of' functions commonly in this classificatory way. In Moses-Columbian the suffix *-imt* occurs exclusively on many personal names, without any detectable meaning other than to indicate that the word is a name.

For further studies of the grammatical and thematic uses of lexical suffixes, see Czaykowski (1982), Czaykowska-Higgins (1996), Czaykowska-Higgins, Willett, and Bart (1996), Davis and Saunders (1973), Gerdts (1995, 1998), Gerdts and Hinkson (1994, 1996), Saunders and Davis (1975a,b,c).

2.2. Combination types. Lexical suffixes can follow either nominal or verbal stems, and can yield either nouns or verbs,⁴ as seen in (10) through (12) (the Lillooet and Musqueam examples in this section

⁴ Although I have argued in the past (Kinkade 1983) that it is not easy to distinguish nouns and verbs in Salishan languages, at least at some levels, Matthewson (1996) gives good evidence that it is possible to make such a distinction at some levels (although not all). The issue is not germane here, and I will use the categories to distinguish different bases and construction types involving lexical suffixes and compounds for clarity of exposition.

are from Gerdts and Hinkson 1996:166).

10. N + L(exical) S(uffix) = N

- Cm s/kint=wíl (nom/Indian=canoe) 'canoe'
 sip'iy=álqs (hide=dress) 'dress made of hide'
 wawakí?-átp (acorn=plant) 'oak tree'
 s/háptn=əx^w (nom/Sahaptin=people) 'Nez Perce Indians'
- Li psúš=əz' (bitter.cherry=plant) 'bitter cherry (tree)'
 k^wušuh=átc'a? (pig=flesh) 'pork'
 lam=áwtəx^w (rum,liquor=house) 'liquor store'
- Ms səm'səmyə=élə (hornet=container) 'hornet's nest'
 qá?-lí?c (water=container) 'water box'
- Ch lúw=qs (agate,stone=nose) 'nosering'
 pástin=q' (white.man=language) 'English language'
 s/č'əs=yəlp (nom/hair=tail) 'hair of the tail'

Note that the second and third Lillooet examples are based on loanwords: 'pig' from French *cochon*, 'liquor' from English *rum*. The use of lexical suffixes is not restricted to native stems. On the other hand, I know of no borrowed lexical suffixes, except as part of borrowed individual lexical items consisting of stem + lexical suffix, such as Moses-Columbian *pən' =línk* (bend=belly)'liver', where the corresponding Moses-Columbian suffix would be *-ank*.

11. V + LS = N

- Cm p'əs'k'a?=ákst (pl.big=hand) 'big hands'
 lək'-íkn' (tie.up=back) 'tire chain, rope to bind a load with'
 k/laḥp=á?st (LOC/flow=rock) [creek name]
 n/hac=áp=xn (LOC/tie=base,rope=foot) 'knot on the end of a rope'
 q^w'iy=mt=íc'a? (black=?=hide) [man's name]
 n/c'əl'•c'ál=s-n (LOC/DISTR•shade=face-INSTR) 'visor, (sunglasses)'
- Li p'an't=átq^wa? (return=water) 'back eddy'
 q^wəc-p=úlm'əx^w (shake-INCH=land) 'earthquake'
- Ms xiləx=áwəł (make.war=vessel) 'battleship'
 f'wəyət=éwt^w (worship=house) 'church'
- Ch yal=úcn (along,edge,around=mouth) 'beach'
 táw=šn (big=foot) 'big toe'
 s/k'aq=áčsti (nom/go.out=insides) 'smallpox'

Both kinds of N constructions often show a relationship that could be paraphrased with LS 'of' or 'from' the preceding N or V, or the V may modify the LS.

12. V + LS = V

- Cm n/cək•k=ałníw't (LOC/hit•O.C.=side) 'he got hit on the side' (INTRANS)
 sc/haw'iy=átx^w-əx^w (IMPF/work=house-IMPF) 'he's building a house' (INTRANS)
 n/sh=ásk'i?t-m kn (LOC/clear=breath-MDL 1SG.SUBJ) 'I cleared my throat' (INTRANS)
 xṁank=áw's tk (like=middle 1PL.SUBJ) 'we like one another' (INTRANS)
 t/qəš=na?-n-cút (LOC/scratch=ear-TRANS-REFL) 'he scratched his ear' (REFL)
 ka/lək'=qin-n (LOC/tie=head-1SG.SUBJ) 'I closed the sack, I put twine around the top' (TRANS)
 c'əlx=ús-n-c (scratch=face-TRANS-1SG.OBJ) 'it scratched my face' (TRANS)
 n/k'í=ús-c lx (LOC/sever=face-3SUBJ 3PL) 'they cut his head off' (TRANS)
 tər'q=xn-mín-n (kick=foot-REL-1SG.SUBJ) 'I scattered it with my foot' (REL)
 lút kis/łaq?•łaq[?]'t=xn (not FUT.1/2SG.POSS/DISTR•wet[INCH]=foot) 'Don't get your feet wet!' (POSS)
- Li ník'=łc'a? (cut=flesh) 'cut meat'
 məys=áwł (fix=vessel) 'repair a car or boat'
 zəx=láp (move=ground) 'crawl on the floor'
 xax'am'=ús (go.up=face) 'go up a hill'
- Ms q^w'əm=əw's (pull.out=body) 'pluck a bird'
 θék^w=əlyən (pull=basket,net) 'pull a net'
 k^wc=áləs (see=eye) 'see with one's own eyes'
- Ch q'áx=ač'a (smear=hand) 'smear (paint) on one's hand'
 t'əlp=ámč (put.on=body) 'put on clothes'
 pat=áps (stick.on=buttocks) 'stick on with the backside'
 łəq=staq-n (throw=fire-3SUBJ) 'throw into the fire'

I know of no N + LS = V constructions, and would not expect them to exist. More detailed information on the creation of stems involving lexical suffixes can be found in Gerdts and Hinkson (1996).

2.3. Lexical suffixes vs. compounding. I have given this attention to the composition of stems with lexical suffixes and of the roles that these suffixes can play in the stems thus created because of the similarities found between lexical suffix use and compounding. Both lexical suffix constructions and compounds consist of a nominal or verbal root or stem followed, respectively, by the lexical suffix or the second part of the compound. Inflectional marking follows both the lexical suffix and the second half of the compound, and the same limited number of suffixes can occur on the first stem (as in 3 above). This identity of positioning is shown in (13) for Upper Chehalis, where all forms are transitive and followed by a transitive/third person object suffix.

13. Ch łaq^wus=ális-n (hit,punch=eye-TRANS/3OBJ) '(he) hit him on the eye'
 łaq^wús=qs-n (hit,punch=nose-TRANS/3OBJ) '(he) hit him on the nose'

- ʔaqʷús|qʷlam-n (hit,punch|heart-TRANS/3OBJ) '(he) hit him on the chest'
 ʔaqʷús|qʷl-an-n (hit,punch|?-eat-TRANS/3OBJ) '(he) hit him on the ear'

This evidence is important to the history of lexical suffixes. Early Salishanists (Boas, Haeblerin, Reichard, Vogt) did some comparative work on Salish, although they did not attempt reconstructions. Newman did some fine reconstruction of pronominal morphemes, but when it came to lexical suffixes, he said:

Descriptively, then, the lexical suffixes are not derived from noun roots, nor is their historical source to be sought in any class of root morpheme. The evidence indicates that these suffixes have been, as they are now, a coherent set of non-nuclear morphemes, with their own viability for change and productiveness. (Newman 1968:27)

What follows will show that it is indeed possible to show that lexical suffixes are derived from noun roots. I turn first to compounding to show which sorts of combinations occur, and which do not.

3. Compounds. Some Salishan languages can create compounds of certain types relatively freely. This is the case for some Interior Salishan languages, such as Moses-Columbian. In Thompson compounding is said to be "infrequent" (Thompson and Thompson 1992:109). Coeur d'Alene restricts compounding to $V + N = V$ (Reichard 1938:639-642). The same was apparently true of Tillamook, although compounding was uncommon there (Edel 1939:29). It also seems to be infrequent in Central Salishan languages. Upper Chehalis and Cowlitz (Tsamosan branch), however, allow liberal compounding. Languages with free compounding represent the old pattern; several languages from different branches use a linking morpheme between the members of the compound which can be reconstructed to Proto-Salish as **-at-* (see 14).

14. Cm p'í[ʔ]q|àt|málk (cook|INCH|CPD|tongue) 'he burned his tongue'
 Ti c/kʷəls|at|yəŋʷás (to.NOM/strong|CPD|heart) 'you are brave' (Edel 1939:29)

The *-at-* that occurs in these constructions does not occur in all compounds, and in some (or all?) Interior Salishan languages the *t* of this morpheme is lost before stems beginning with *s* (whether a prefix or the first consonant of the root).⁵ Stress patterns also ensure that compounding exists. For example, in Moses-Columbian all compounds have primary stress on the second part of the compound, and strong secondary stress on the *-at-* ligature, with stress on the first part of the compound reduced. (See Reichard 1938:642 for other arguments supporting compounding as a process.)

Given N and V input and output, there could be eight sorts of compounds ($V + N = N$, $N + V = N$, etc.); only three are particularly productive in Upper Chehalis and Moses-Columbian, two languages that allow a considerable amount of compounding. Other languages appear to be more restrictive.

The compounding of two nouns yielding a noun (as in 15) is relatively uncommon, although apparently not problematical.

⁵ There are numerous exceptions to this rule, so there is probably more involved. What determines whether *-at-* or zero occurs is unknown.

15. $N + N = N$

- Ch pt=qʷixʷ|ʔukʷt (?=night|sun,moon) 'moon'
 qá-t|lam (water-?|alcoholic.drink) 'drunkard'
 s/čanúkʷ|qà? (NOM/Chinook|water) 'Columbia River'
- Cm s/kint|à|s/cám (NOM/Indian|CPD|NOM/bone) 'skeleton'
 s/qəftmxʷ|à|xčín (NOM/man|CPD|horse) 'gelding'

Two nouns yielding a verb ($N + N = V$) has not, unsurprisingly, been found to occur. Also common in Upper Chehalis and Moses-Columbian are $V + N = N$, as in (16).

16. $V + N = N$

- Ch cix|ʔúkʷt (show|sun,moon) 'sunshine'
 ʔəq|xč (wide|belly) 'beaver'
 s/ciqʷ|qà? (NOM/dig|water) 'a well'
- Cm sq|àt|xʷəf=ánaʔ=xn' (split|CPD|hoof?=ear=foot) 'split hoof'
 s/yəm-m|à|s/kint (NOM/old-MDL|CPD|NOM/person) 'an old person'
 s/k'iyʷ|sáwt=kʷ (NOM/pray|?=water) 'holy water'

It is not clear at this point how widely distributed this pattern is in the rest of Salish.

The most productive compounding pattern is $V + N = V$, exemplified in (17). This, as noted above, is the only pattern used in Coeur d'Alene (Reichard 1938) and Tillamook (Edel 1939).

17. $V + N = V$

- Ch sà-ʔ|cítpn (make|fishtrap) 'build a fish-trap'
 xá-ʔ|s/tiq'w (look.for|NOM/horse) 'look for a horse'
 qin|ál|čəwt (want|CPD|wife) 'want a wife'
 k'wác|cəni (middle|3d.person) 'between'
- Cm xəlq|àt|qʷisp (butcher|CPD|cow,buffalo) 'butcher a cow'
 q'x|àt|xwál-m (make.trail|CPD|trail-MDL) 'make a trail'
 lək'•lək'-xn|à|xč=cí-mx kn (DISTR•tie=foot|CPD|bite?=mouth-IMPF 1SG.SUBJ) 'I'm hobbling a horse'
 wək|sumáx (see|spirit.power) 'find your power'
- Cr iyaʔ|a|námqəʔ (procure|CPD|black.bear) 'they were impounding animals' (Reichard 1938:642)
 tiʔxʷ|e|s/miy'em (obtain|CPD|NOM/woman) 'he secured a wife' (Reichard 1938:620)
 gʷiy|e|s/yáf•af (finish|CPD|NOM/assemble•o.c.) 'they finished assembling' (Reichard 1938:641)

- Ti ʔa c/kʷənən|aʔ|gʷəkʷáʔ (FEM TO.NOM/take|CPD|child) 'she takes the new born baby' (Edel 1939:29)
 c/kʷəls|aʔ|yəŋʷás (to.NOM/strong|CPD|heart) 'you are brave' (Edel 1939:29)

The compound types exemplified above have in common an N as second member, and such compounding, with the exception of excluded N + N = V, appears to be robust in Upper Chehalis, Moses-Columbian, and a few other Salishan languages. When compounding is restricted to one type, V + N = V is the choice. It should be noted at this point that there is a parallel between this occurrence of +N compounds and the occurrence of lexical suffixes, as shown in (18):

18. N + LS = N N + N = N
 V + LS = N V + N = N
 V + LS = V V + N = V
 *N + LS = V *N + N = V

This is not surprising, inasmuch as Salishan lexical suffixes are all nominal semantically, and it will be shown below (in 5.1) that lexical suffixes originated as nouns.

It remains to show what sorts of +V compounds can occur, although they will not bear on the question of the origin of lexical suffixes in Salish. The N + V types may be relevant to the creation of lexical prefixes, however (as may N + N compounding).

N + V = N and N + V = V have not been found. This is part of a general pattern in which compounds with V as second element are disfavored. They are not excluded, however, if the first element is V, although they seem to be much less common than +N compounds. Examples of V + V = V compounds are shown in (19).

19. V + V = V

- Ch ʔit nám|qʷuʔ (DEF finish|drink) 'he drank, he finished drinking'
 qin-s|pút-n ɕn (want-?|know-3OBJ 1SG.SUBJ) 'I want to find out'
- Cm — ?
- Th n/c'ək|súp' (LOC/used.up,breathe) 'be out of breath' (Thompson and Thompson 1992:109)
 siʔ|ʔ|núkʷ (play|CPD|wrong) 'they commit adultery' (Thompson and Thompson 1992:110)

The two Upper Chehalis examples show two roots, $\sqrt{nám}$ - 'finish, done' and \sqrt{qin} - 'want, like', which occur widely in compounds, where they have been essentially grammaticized. The root $\sqrt{nám}$ - can be attached to any root to indicate that action is past, and in this usage is essentially a past tense prefix. The root \sqrt{qin} -, when compounded, is essentially a desiderative prefix. These are the uses in the examples in (18). Both occur freely as independent, inflected roots as well.

This category can easily be confused with V + N = V compounds because of easy nominalization of verbal stems. Such nominalization is most commonly indicated by an *s*- prefix, although numerous exceptions exist.

The final type appears to be quite rare. The only examples I have found are those in (20) from Moses-Columbian.

20. V + V = N

- Cm xs|àʔ|qixʷ (good-CPD-smell) 'good smell, perfume'
 k's|àʔ|qixʷ (bad-CPD-smell) 'bad smell'⁶

ʔas- 'good' and *k'as*- 'bad' may be special cases. Reichard notes that "the stem *ʔa* or *ʔes*, good, is used as the independent element of a compound verb to denote 'under favorable circumstances', or 'without interruption'. This use is very common indeed" (1938:642). The productivity of the construction in Coeur d'Alene is the relevant point here, since its meaning there seems to be unique.⁷

4. **Compounding as source of lexical suffixes.** With the similarities in the positioning of lexical suffixes and second members of compounds following the (main) stem and preceding inflectional endings, it should not be surprising that some lexical suffixes are identical to nouns in one or another Salishan language. This has been pointed out by others (Reichard 1938, Egesdal 1981, Carlson 1990). The clearest instance is the use of *-sqaxaʔ* in several Interior Salishan languages to refer to domesticated animals (see 21); cognate forms of this suffix occur in Northern Interior Salish and several coastal languages (e.g. Shuswap *s/qéxe*, Saanich *s/qéxəʔ*, Tillamook *s/qéxeʔ*), Upper Chehalis and Cowlitz *qáxaʔ*, Lower Chehalis *qáxʔ*), all meaning 'dog'. The form can be reconstructed to Proto-Salish **s/qáxaʔ* 'dog'.

21. Cm swip-sqáxaʔ (white.man=domesticated.animal) 'white man's horse'
 s/t'əl'c'aʔ=sqáxaʔ (NOM/mule.deer=domesticated.animal) 'mule'
 Ok kən k-s/ʔamən=sqáxaʔ (1SG.SUBJ UNRL-ABS/feed=domesticated.animal) 'I am going to feed the horse' (Mattina 1987:183)
 Ka ʔac=sqáxaʔ-tən (tie=domesticated.animal-INSTR) 'rope' (Egesdal 1981:13)

The Interior Salish suffix has a more general meaning than its coastal cognate lexical items, as is usual with lexical suffixes. This suffix is remarkable, however, in that it retains the *s*- nominalizing prefix.

It is not the only suffix to retain this *s*-, however. Note the following Interior Salishan suffix (22):

22. Li s/ʔac-p=ásq't (NOM/complete-INCH=day) 'week' (van Eijk 1997:84)
 Th s/mus=ésq't (NOM/four=sky,day) 'Thursday' (Thompson and Thompson 1996:207)
 Sh cəkʷ•cəkʷ=ésq't (DISTR•bright=day) 'bright day' (Kuipers 1974:63)
 Cm wiyʷ=ásq't (finished=day,sky) 'it stopped raining,snowing'
 Ok pʔ-m=ásq'ət (end-MDL=day,sky) 'end of a day' (Mattina 1987:135)

⁶ Other words of this type are *k'satɕíw* 'ugly' and *ʔasatpták* 'kind-hearted, good-natured, friendly', *k'satpták* 'no-good', and *qʷ'ən'qʷ'ən'atpták* (*qʷ'ən'* 'poor') 'low class, poor class of people', except that no roots **ɕíw* or **pták* have been identified. The resultant forms of the first three are not necessarily nouns. Alternatively, *-atɕíw* and *-atpták* may be lexical suffixes. I do classify *-atɕíw* 'side' and *-atq'ət* 'shoulder', which have the same structure, as lexical suffixes. All these share strong stress on the final morpheme, a consistent feature of compounds. Only *qixʷ*- corresponds to a morpheme found at the beginning of words (although only in its inchoative form, *qíʔʔxʷ*), where roots normally occur.

⁷ It is not clear what Reichard means by "compound verb" here, or if she intends this to be a different concept from "nominal incorporation". All the examples in sections 617-633 NOMINAL INCORPORATION AND VERBAL COMPOUNDING involve a noun as the second element of the compound. Some of these nouns are nominalized verbs, as is the case with the two examples she gives with *ʔes* 'good' as first part of the compound.

- Ka s/č•čəm=á(sq'at) (NOM/DIMIN•surface=day,sky) 'sky' (Vogt 1940:52, 143)
 Cr či/yar-p=ásq'it (CIS/roll-INCH=day,sky) 'Rolling-in-the-Sky' [name] (Reichard 1938:611)

A free form of this suffix is retained in Okanagan as *sq'it* 'rain' and in Lillooet *sq'it* 'day'; it also appears in several coastal languages: Squamish *q'it* 'early morning, daylight', Klallam *q'it* 'noon meal', Cowlitz *q'it* 'tomorrow', Upper Chehalis *q'it* 'day, daylight', and Tillamook *q'it* 'ready, now'. These forms make it clear that the *s* is originally a prefix, retained in the lexical suffix. The Interior Salishan languages have made it more clearly a lexical suffix by adding *a* before it, the most common vowel preceding lexical suffixes, and by deleting the vowel of **q'it* (see section 6).

A third example shows this pattern even more vividly through data that come exclusively from Interior Salish. The forms are given in (23).

23. Th =esyèp' 'firewood; charcoal'; =úsyp' 'firewood'
 Li =úsləp', =sləp' 'firewood'
 Ok s/líp' 'wood'
 Cm s/láp' 'wood, stick'
 Cr s/líp'-t 'wood'

It is clear that the Thompson and Lillooet suffixes developed from cognates of the free forms found in Okanagan, Columbian, and Coeur d'Alene.

The distribution of the independent form corresponding to a lexical suffix may be quite restricted. Thus derivatives of Proto-Salish *=*wil* 'canoe, container' occur in virtually every Salishan language; corresponding independent forms occur only within the Tsamosan branch (see 24).

24. Ch wít 'canoe'
 Cz wít 'canoe' (root √wíl-)
 Lo s/wít 'canoe'

These languages have lexical suffixes derived from this root as well.

In a number of other cases, it is unclear whether a morpheme is best considered to be part of a compound or to be a lexical suffix. Thompson and Thompson (1996:264) treat *s/qáxa?* as the second element of compounds, rather than as a lexical suffix, which it clearly is in some other Interior Salishan languages. Reichard considers =*sčint* in (25) as a lexical suffix (1938:617), although it is not clear why these could not be compounds, with *sčint* 'person' as second member, when it is recalled that *-at-* and its variant *-a-*⁸ commonly link the two parts of a compound.

25. Cr g^wən=esčint-š (call=people-SG.IMPER) 'call the people!'
 cəg^w=esčint (disposition=people) 'guardian spirit'
 t'ap=sčént (shoot=people) 'he shot'

⁸ These are *-et-* and *-e-* in Coeur d'Alene, presumably through reduction of the **a* in the morpheme to **ə*, then to *e*; otherwise it would be expected except when followed by a back consonant, when (along with **a*) it should *a*.

Some constructions in Upper Chehalis look very much like compounds, while others with the same second morpheme or its derivative are clearly lexical suffixes. The forms in (26) illustrate such pairs, with the ambiguous construction given first in each pair.

26. Ch sá-?|xš (make|house) 'build a house'
 yap-ál=axš (walk-EXP=house) 'visit'
 ?áy|tmš (good|earth) 'good land'
 sač-áy=tmaš-n (split-EXP=earth-3SUBJ) 'plow'
 ?upál|yəns (eat|tooth) 'have a toothache'
 s/qəl=ns (NOM/?=tooth) 'jaw, chin'

In 'visit' and 'plow', the expansion suffix (see 7 below) makes it clear that what follows must be a lexical suffix. In 'have a toothache', the full form of 'tooth' occurs; in 'jaw, chin' a truncated form typical of lexical suffixes is used. It is unclear what the best analysis of these forms might be.

Nevertheless, forms like those in (21), (22), (23), and (25) make it clear that at least some lexical suffixes have arisen through compounding.

5. Problem of [C + LS] forms. In addition to those lexical suffixes which are clearly derived from independent forms and are sometimes identical to them, there are a number of independent lexical items that consist of a single consonant (and often a vowel) followed directly by a lexical suffix ([C + LS]); the meaning of the lexical item and the lexical suffix is usually the same, or very nearly so, and they are all nouns. Every Salishan language has several of these. I give a few examples in (27).

27. Be m=nk 'dung, excrement'
 Cw θ=áθən 'mouth'
 Ld q'ə-yúq^w 'throat'
 Ti yə=šén 'leg (knee down)'
 Ch, Cz m=áq^w-m 'prairie'
 Cm t'=ána? 'ear'
 Cr ?e=tx^we? 'camas'

Such forms have long been problematical. Are the lexical suffixes in these cases added to a root (either mono-consonantal or unrecoverable), or are these the roots from which the lexical suffixes have derived? Virtually no attention has been paid to this problem. I once suggested that the initial consonant was "probably derived from some other root", with the lexical suffix added to it (Kinkade 1963:352); a few years later I equivocated, and did not make a choice between the two possibilities stated above (Kinkade 1967:3). In the most thorough discussion of the origins of Salishan lexical suffixes yet, Egesdal says that "it seems most likely that the lexical suffix is included in the independent form as a combinatory element, rather than that the lexical suffix has been derived from the independent form" (1981:3). He further points out that,

for this and other reasons, "speculation on the origin of lexical suffixes has been avoided by scholars in the past" (1981:3).⁹

There are, in theory, four choices to explain the existence of these [C + LS] forms:

28. C₁ is a formative or prefix of some sort
 C₁ or C₁V is a root
 C₁ is the remnant of a regular CVC(C) root
 the suffix is the remnant of a CVC(C) root

The first two possibilities can be dismissed quickly. Although Kuipers identifies a prefix *m-*, and identifies it as a formative "found in a number of words referring to parts of the body", and which might go back to a root of some shape or other, (1967:116), and a *t-* formative (1967:117), he makes no mention of other cases of C₁ before lexical suffixes. However, when the full repertoire of [C + LS] forms is examined, at least eight such formatives would be required for words that can be reconstructed to Proto-Salish (to say nothing of such forms in individual languages that cannot be reconstructed to Proto-Salish). To call all these formatives would be unnecessarily arbitrary. Nor are there prefixes that can account for these initial consonants. Prefixes are not abundant in Salishan languages in any case, and none that exist will account for these consonants.

The likelihood that C₁ of such forms is a root of the shape \sqrt{C} or \sqrt{CV} is also highly improbable, especially since no corroboration for these particular putative roots can be found, and thus cannot be glossed. Such roots are extremely rare in Salish. Of some 500 roots reconstructed by Kuipers (1970, 1976, 1981, 1982, 1995, 1996) only five (1.01%) are CV (there are no C alone), none correspond semantically to the first C of a [C + LS] root, and only one has the same consonant as begins any [C + LS] form. Single consonant roots are strongly disfavored in Salish; 75.15% of Kuipers's reconstructed roots have two consonants (CVC or CCV), another 21.61% have three consonants, and 2.22% have four consonants.

That C₁ of these forms is the remnant of a longer root is possible, although unprovable, since these initials cannot be related to other, existing roots. A loss of C₂ (and any C₃ present) would also suggest that consonant clusters were reduced in favor either of the second member of a compound or of a suffix. Neither is impossible, although it should be remembered that consonant clusters in Salishan languages are rarely problematic, and [CVC + LS] forms do occur; there would be even less reason to lose consonants if a suffix began with a vowel. It could also be possible to lose C₁V of the root, leaving only C₂. Twana and Shuswap have reduplication patterns that show C₂•C₁VC₂ rather than the expected C₁VC₂•C₁VC₂ for 'distributive plural'; these must be instances of the loss of C₁V of the first part of the reduplicated form, and such a process could account for the [C + LS] forms as well.

The last possibility is more or less the converse of the preceding one, and the same reservations therefore apply. Nevertheless, it is the development for which I will now argue.

5.1. Explanation of [C + LS] forms. In thinking about lexical suffixes, it has struck me that Upper Chehalis *máqsn* 'nose', which is a [C + LS] form, and its cognates all begin with the same consonant (Upper Chehalis and Moses-Columbian both have *m*, Lushootseed and Twana both have *b*, Tillamook has *w*, Saanich and Klallam both have *ŋ*, etc., all regular reflexes of Proto-Salish **m*) Kuipers has even

⁹ By "origin", Egesdal does not mean reconstruction. Many lexical suffixes have been reconstructed to Proto-Salish.

reconstructed **máqsn* (1982:76) (he has also reconstructed a few other [C + LS] words). I decided to look at all the [C + LS] words based on suffixes that have been shown to occur throughout Salish to see if any pattern might emerge. For this I used the 37 lexical suffixes reconstructed by Kuipers (1976:619; his list there includes items I would not consider to be lexical suffixes), and three that I added, both checked against suffixes that Haeblerin thought to be found in "all areas" (1974:230). (I have since reconstructed 14-18 additional lexical suffixes, although I have not yet searched for [C + LS] forms related to them; see 5.2.) The results were startling, and are shown in Table 1.¹⁰ The C of [C + LS] forms *consistently* match across languages except in seven cases where there was more than one exemplar consonant.¹¹ Each language has anywhere from 6 to 14 [C + LS] words corresponding to reconstructible lexical suffixes (I have certainly not identified them all); the lists do not correspond from language to language, which is probably the main reason the overall pattern has not been noted before. All of these [C + LS] forms are nouns, and the majority are CVCC (i.e. triconsonantal; compare this with the percentages given above of biconsonantal roots, at 75%, and triconsonantal roots, at 21%). I refer to the [C + LS] forms as full forms.

What this evidence shows, then, is that a noun was compounded to a preceding verb stem, then (presumably over time) lost its initial consonant, becoming grammaticized. The original lexical noun in its full form was then usually replaced in most languages, leaving only the remnant of [C + LS] forms that we find today. In (29) Sechelt and Saanich (and a few other languages) retain the full form of 'mouth' and use its suffix derivative as well, while Upper Chehalis (and others) have only the suffix. Upper Chehalis and Twana have both the suffix and full form of 'eye, face', while Moses-Columbian (and most others) have only the suffix.

29. Ch	=ucin- 'mouth, food, edge'
Se	cúcin 'mouth'
Sa	θáθən, =aθin 'mouth'
Cm	=us 'eye, face'
Ch	mus, =us 'eye'
Tw	bus, =us 'face'

In several cases (e.g. *=*ikin* 'back', *=*ap* 'bottom, base') the full forms were lost everywhere. This process undoubtedly provided a pattern upon which newer lexical suffixes were later formed — i.e. new suffixes were formed simply by dropping an initial consonant from a word without going through the compounding stage (such as Upper Chehalis *-apš* being created from *cáps* 'stream'). Some fluent speakers are still somewhat aware of this process. One speaker is reported to me to have wondered why there are no lexical suffixes for certain objects, and why people could not just take the lexical items for them and take off the first consonants to create the desired suffixes.

This does not mean that lexical suffixes should not be reconstructed to Proto-Salish. They should be, but so should one reconstruct the full forms. Presumably both existed side by side in Proto-Salish. It

¹⁰ Comments to Table 1 are in Appendix 2.

¹¹ The exceptions are also of interest in showing that there is more than one source of these [C + LS] forms. The meaning of most [C + LS] is the same as that of the LS alone; the aberrant consonants are likely to occur with a meaning that is an extension of the basic LS meaning, as in Coeur d'Alene *s/éá-stq* 'camas digging', and are probably reduced roots.

would only be in some form of pre-Proto-Salish that only the free forms existed, before lexical suffixes developed at all. The development of lexical suffixes in Salish may have been stimulated by the presence of this category in neighboring Chemakuan and Wakashan, giving rise to a major areal feature in the Northwest. Lexical suffixes in those two families are far more numerous than in Salish, and express both nominal and verbal concepts.

These observations about the development of lexical suffixes are not entirely new, but they have not been examined systematically, and the overall pattern has not been noted. Haeberlin (1974) sometimes lists the full forms that correspond to a lexical suffix under the heading for that suffix, although they tend to get lost in his discussion and exemplifications. Kuipers has reconstructed a few of these full forms, but he did not draw attention to the overall pattern presented here. Egesdal guessed at the process, but had not worked out the pattern when he said, "the incorporated noun may lose initial and/or final segments" (Egesdal 1981:6 citing Mardirussian 1975 as one of the criteria for noun-incorporation). After he gives the example in (30) (1981:13; he took these forms from Vogt 1940:55),

30. Ka s/qélix^w 'human being, Indian'
s/nk^w=élix^w (NOM/one=Indian) 'tribe, a group of people'

along with several similar instances, he observes that

perhaps, the original process was never completely lost, but remained submerged. The above examples ... seem to indicate that the languages are repeating an old pattern with new materials. (Egesdal 1981:13)

It requires familiarity with languages from different parts of the family to note the pattern of correspondences shown in Table 1; both Kuipers and Egesdal had studied languages from both Central and Interior Salish, and this led them to their own discoveries. My observations here take their work one step further.

5.2. Reconstructed LS and [C + LS]. Following are lexical suffixes that have been reconstructed, either in Kuipers (1976) or by me. The order mostly follows Kuipers (1976). I add an initial consonant for the full form when possible.

meaning	Kinkade reconstructions	Kuipers reconstructions
bottom, rear, base	*=ap	*=ap
tail, rump	s*=ups	*=up(s), *=up-a?, *=i-ps
back of neck, neck	?t*=apsam, -*al=ps	*=apsm
implement	*=min	*=min
land, people		*=mix ^(w)
people, group, residents	t*=(a)mix ^w	
female breast	*-al=(a)mix ^w	
earth, land, ground	*-ul=(a)mix ^w	*-ul=mix ^(w)
person, individual	?t*=mix	
implement, place	*=tn, *=tən	*=ti/an
mouth	c*=ucin	*=(u)c(in)
hide, surface, blanket	?*=ic'a?	*=ic'a?

face, eye	?m*=us	*=us
small round object	?*=usa?	*=us-a?
ear, side of head	t*=-ani?, (*=-ana?)	*=ana
tooth	y*=-anis	*=anis
intestines, belly	t*=-anak	*=ank
excrement	m*=-anak	*=anak
weather, season, year	*=anux ^w	*=anx ^w
vegetation, plant	*=aɬp	*=aɬp
throat, mouth	?c*=-aɬnal	*=ɬn
offspring, child	*-ay=alt	*=alt
stone	*=als	*=u/alst
tree, long object	*=alaq ^w (IS only)	*=al(i)q ^w
fire(wood)	?m*=-ikup	*=kup
hand, forearm	*=akis, *=aka?	*=ak(ist), *=ak-a?
back	*=ikin	*=ikn
water	*=k ^w a?, *=k ^w u	*=-(at-)k ^w a, =q ^w a
foot, lower leg	y*=xan	*=xan
lodging	c*=tx ^w , *-aɬ=tx ^w , *-aw=tx ^w 12	*=ax ^w , -(t=, aɬ=)x ^w
penis, sexual organ	?p*=aq	*=aq
nose, point	m*=aqs	*=aqs
head	?m*=aqin	*=qin
head, top	*=iq ^w (an)	*=q ^w
upper arm, shoulder	*=axan	*=axan
body, waist, middle	*=awas	*=i/aws
breast, chest, middle	*-al=awas	*=alus
torso, chest, insides	*-i/an=was	*=i/anwas
net, trap	?t*=-ayan, *-ay'an	*=ay'a
tongue	t*=ix ^w acaɬ	
chest	t*=ax ^w ac	
vagina	*=it	
belly, emotions	*=iwan	
smell, taste	*=aɬq, (*=asqa)	
tree	?l*=ay	
body, meat, inside(s)	?s*=aɬci?	
hide, skin	*=alx ^w	
floor, bed	*-al=inup	
breath	*=askay(-t)	
fire, firewood	*=staq	
salmon	*=anax ^w	
time(s)	*=aɬ	
nights, days	*=yas	

¹² This may possibly be *ci or =itx^w.

animal	*=ayu?	
step	*=aq	
color	*=alus	
small object	*=uma? (cf. Wakashan)	
canoe, container, bowels	*wil	*=wił/l
day, sky	*s/q'it	
domesticated animal	*s/qáxa?	
body	*=amac (Central Salish and Tsamosan only)	
belly	*=x'ak (Central Salish and Tsamosan only)	
smell, taste	*(-al)=aqap (Central Salish and Tsamosan only)	
bundle	*=alik (Central Salish and Tsamosan only)	

Most of the reconstructions are straightforward (in spite of some differences between Kuipers's reconstructions and mine); a few merit comment.

- (a) The suffixes for 'canoe', 'day', and 'domesticated animal' derive from free forms; 'day' and 'domesticated animal' appear as lexical suffixes only in Interior Salish.
- (b) The last four suffixes are Central Salish and Tsamosan only, and are thus not as certain to be Proto-Salish.
- (c) The suffix for 'small object' occurs in Comox, Pentlatch, Squamish, Saanich, Okanagan, and Moses-Columbian only. The first four may be borrowed from Wakashan, but not the Okanagan and Moses-Columbian forms. Separate suffixes may be involved.
- (d) Kuipers identifies a suffix *-a?, which creates pairs of a few suffixes. This ending occurs on many other forms in Salishan languages, although its meaning and function have not been identified.
- (e) I reconstruct 'offspring' and 'floor, bed' only with expansion suffixes, and 'back of neck' in two shapes, one with an expansion suffix; 'smell, taste' can also have one.
- (f) The suffix for 'lodging' is problematical; it too seems to have expansion suffixes, although not the usual ones.
- (g) The suffix for 'water' appears to have gotten tangled up with Proto-Salish *q'u? 'drink' and *qali? 'water' in many languages.
- (h) I separate Kuipers's reconstruction of 'land, people' into four parts, two of which are derived by means of expansion suffixes. The basic split into *(a)mix^w and *=mix must be recognized; this pair, and derivations with expansion suffixes, have led to considerable confusion throughout the family. Recognizing the four parts helps to explain a number of otherwise irregular forms in many languages.
- (i) Much the same thing can be said about the 'body', 'breast', 'torso' set. Recognizing one base form, with two developed from it by means of expansion suffixes clarifies many things about the variants found in this set.

Appendix 1 gives the known examples of [C + LS] forms corresponding to those lexical suffixes that can be reconstructed, and which I have identified to date. Appendix 2 gives comments relating to the initial consonants in Table 1.

6. Initial vowels of LSs. Two problems relating to the origin of lexical suffixes remain to be resolved. One pertains to the vowels that occur at the beginning of the suffixes, discussed in this section.

The other is to account for the expansion suffixes that are often found between the stem and the lexical suffix; this will be discussed in section 7.

If the analysis given in section 5 is correct, the vowel preceding a lexical suffix should be the vowel of the full form from which it is derived; this is usually the case, yet not always. If that vowel is *a*, *i* or *u*, it is normally retained in the suffix, as with *t-a^wac(k) 'chest', *t-i^waca^t 'tongue' or *c-u^wcin 'mouth'.

There are many exceptions in the modern languages to the vowels that occur in the reconstructions of lexical suffixes shown in 5.2, although not on those in full forms, and suffixes reconstructed with an initial consonant often occur with an initial vowel in the daughter languages. The exceptional vowel is not often *u*. Tillamook has variants with initial *u* in 'foot', both suffixes for 'head', and for 'back'; Pentlatch has 'stone' with *u*. Neither language is fully described, and developments in them have not been worked out in detail; these instances of *u* must remain unclear. Quinault has a case of *u* on 'breast, chest', Twana and Upper Chehalis have cases of *u* on both 'people, group', and Upper Chehalis has one on 'earth, land' (and see 23). I have reconstructed both these suffixes as belonging to sets that include different expansion suffixes. These expansion suffixes have led to considerable merging and confusion within suffix sequences throughout Salish, and these aberrant vowels may simply be part of that confusion.

There are several instances of *i* where another vowel, or no vowel at all is expected. These may be reductions of the expansion suffix -ay-. I can offer this as no more than a proposal at this time, largely because it has not been possible to explain the functions (or meanings) of these expansion suffixes.

Cases of *a* where another or no vowel is expected may have two explanations. One is the reduction of an expansion suffix, but one that requires the loss of its consonant rather than its vowel; Lushootseed and Twana show such variation synchronically. A more likely explanation is that *a* has often been added analogically. The majority of lexical suffixes that begin with vowels begin with *a*, and it is a less marked vowel than either *i* or *u*, making it a likely choice of vowel when one is needed.

Some reconstructed full forms that begin with a consonant cluster appear in individual languages with a vowel between these consonants. It will be either *a* or *ə*, stressed or unstressed. If it is *a* it may be analogical or an introduced neutral vowel, as above. If it is *ə*, it may be a reduced vowel or it may be epenthized to bear stress.

7. Expansion suffixes. What I call expansion suffixes is a set of suffixes that precede lexical suffixes. These must have developed after the lexical suffixes themselves had become separated from full forms. Their function is nowhere clear, although their identity is usually obvious (it is possible that a number of lexical suffixes occur only with them, making it impossible to split them off). Lexical suffixes often occur both alone and with an expansion suffix, but such pairs only sometimes have different meanings. Thus, in Upper Chehalis -anux^w and -al-anux^w both occur meaning 'years', the only difference being that they attach to different numerals. On the other hand, the extender -ay- sometimes clearly refers to the extremity or end of something, as when -ay-ač'a refers to fingers (or elongated objects), from the basic suffix -ač'a 'hand'.

It is far from clear how many of these expansion suffixes there were in Proto-Salish. They have been analogized and reduced so much that reconstruction is difficult. There seem to have been at least three, *-al-, *-ay-, and *-ul-, and probably one with *t* (some with *n* and *w* are also likely). All can occur without these vowels, and modern languages sometimes use the vowel alone. It is possible that these suffixes are reductions of ancient lexical suffixes, occurring as the first of a two or more suffixes in one word. If -ay- has this sort of origin, and if the Upper Chehalis reference to extremities obtains elsewhere, it could possibly be related to the Moses-Columbian suffix -aya? 'head, top'.

A tempting source of *-al-* is in the compounding link **-at-*, discussed in section 3. The problem with this is that languages that use *-at-* for compounding also have *-al-* as an expanding suffix. Even though *-at-* always occurs before a consonant and *-al-* usually occurs before a vowel, simple devoicing is not an option because (a) the consonant following *-at-* is not always voiceless, and (b) languages like Moses-Columbian and Coeur d'Alene do not have a rule that automatically devoices *l* in any environment.

Expansion suffixes are important to a full understanding of the use of lexical suffixes, but the problem requires further work.

8. Classification. Where lexical suffixes fit into a typology of grammatical elements — whether or not Salishan lexical suffixes are instances of noun incorporation — remains to be clarified. This question has been debated for many years, ever since Sapir (1911) took issue with Kroeber's (1908) remarks about them. Reichard restricted the term noun incorporation to refer to compounding (1959:239), thus severely limiting her use of the term; it did not include lexical suffixes.

The debate about whether or not Salish has noun incorporation has been continued by Hagege (1978), Egedal (1981), Carlson (1990), Gerdtz (1998), and Gerdtz and Hinkson (1996), among others. The history and possible origin of lexical suffixes has been a related issue, dealt with particularly by Egedal (1981) and Carlson (1990), and has been the main topic of this paper. Egedal hopes to resolve the issue:

This paper, then, attempts to awaken the sleeping question: Just where did the lexical suffix come from? ... The intent of the following discussion is to suggest noun incorporation, more generally referred to as noun-verb compounding, as a reasonable source for lexical suffixes. ... certain functional and structural characteristics of lexical suffixes are compared with Mairiussian's (1975) proposed 'universals' for noun incorporation in order to demonstrate a clear likeness between the two.... (Egedal 1981:4)

Mithun, in a thorough study of noun incorporation, does not consider Salishan lexical suffixes to be incorporated nouns, although they function like them, because "a derivational relationship between the affixes and independent N's is not now discernable" (1984:887). Questions remain, however.

Some of the debate about typologizing lexical suffixes revolves around terminology. Sapir and Kroeber were quite specific in this regard, and classified affixes in some languages as noun incorporation; they contrasted this in particular with "composition" (i.e. compounding). Incorporation had to be an inclusion of an independently occurring noun or noun base within a verb complex; the independent noun and the incorporated noun had to be phonologically related, not just the same semantically. Further,

it is equally essential to a reasonable understanding of noun-incorporation that the combination of verb and noun object results in a verb functioning as predicate. Man-eater is not incorporation but composition because *eater* is functionally a noun. (Kroeber 1908:570)

Because incorporated nouns so commonly refer to body parts, Kroeber also pointed out that

incorporation only of nouns referring to parts of the body does not make noun-incorporation; and this leaves noun-incorporation as a general process to be proved for Selish, Kootenay, Pawnee, Tarascan, Algonkin, and other languages in which it has been instanced as occurring. (Kroeber 1908:572)

Thus Kroeber leaves it undetermined whether or not Salish uses noun incorporation. He amplified his "to be proved" when he says:

The "substantivals" of Selish and Wakashan, elements of substantival significance but used only in combination with other stems or elements of words and usually unrelated in form to the independent words of the same significance, furnish apparent instances of incorporation, in that they are sometimes used as objects of verb stems with which they are combined. They are however also employed subjectively and adverbially, and are therefore more than incorporated nouns. The essential nature and function of these elements is still obscure, and until they become better understood they also can furnish no proof of objective noun-incorporation. (Kroeber 1908:572-573)

Sapir clarified the issue, emphasizing the dissimilarity between lexical suffixes and their semantically equivalent independent nouns:

In the second place it is clear that verbal affixes that refer to nouns, in other words, convey a substantival idea, are not instances of noun incorporation if they are etymologically unrelated to the independent nouns or noun stems with which they seem logically connected. Such affixes are generally either instrumental (Siouan, Shoshonean) or local (Kwakiutl, Salish) in character, but may also be employed to represent the logical object or even, in the case of intransitive verbs, subject (this use is characteristic of Kwakiutl, Chemakum, and Salish). As long, however, as they are lexically distinct from noun stems proper, they must be looked upon as grammatical elements pure and simple, however concrete their signification may seem. They are logically related to independent nouns of the same or allied meaning as are tense affixes to independent adverbs of time. This working over of substantival concepts into the verb-unit as derivational rather than compositional elements is decidedly characteristic of several American linguistic stocks; it belongs rather to be the sphere of "polysynthesis" than noun incorporation. (Sapir 1911:251-252/1990 [1989]:28-29)

He further refined the definition of noun incorporation by distinguishing morphological and syntactic aspects of the process:

What, then, is noun incorporation? Dr. Kroeber defines it as follows: — "Noun incorporation is the combination into one word of the noun object and the verb functioning as the predicate of a sentence." (Kroeber 1909 [sic; 1908]:569). This definition seems acceptable enough at first sight, and there would be no great difficulty, on the basis of it, in proving the existence of noun incorporation in America. Examining the definition, we find that two things are required — a noun must combine with the verb-predicate into a word-unit, and the noun so combined must function as the object of the verb. The first requirement is morphologic in character, the second purely syntactic; in other words, the first calls for a certain type of word formation, while the second demands that a particular logical relation subsist between the two independent elements that enter into this word formation. Without denying the abstract right to set up such a definition, it would seem that the combining of a morphologic requirement with an independent syntactic one yields, on general principles, a definition of too narrow a scope for the discussion of as fundamental a problem as noun incorporation is felt to be. Noun incorporation is primarily either a morphologic or syntactic process; the attempt to put it under two rubrics at the same time necessarily leads to a certain amount of artificiality of treatment. A parallel case will make clearer the point here raised. Noun composition may be defined as the combining into a word of two independent nouns or stems, the resulting word being treated as a noun. (Sapir 1911:254-255/1990 [1989]:31-32)

Thus lexical suffixes are not, as a class, properly instances of noun incorporation. Some, like **wil* 'canoe' or **sqaxa?* 'domesticated animal', could be so considered; so could all lexical suffixes derived from [C + LS] forms. However, the others do not qualify on at least two counts: (1) they lack any phonological similarity to their free nominal equivalent, and (for all suffixes) (2) they attach to nouns as well as to verbs. As to the first of these, consider the following pairs from Upper Chehalis, where the first form is the independent lexical item, the second the semantically equivalent lexical suffix (31).

31.	Ch	mátn 'head'	=lis-
		čálš 'hand'	=ač'a
		cúť 'foot'	=šn
		qónš 'mouth'	=łn, =łnal-
		qá·? 'water'	=či
		sq ^w étwn 'fire' ¹³	=stq

Both the suffix and its unrelated semantic equivalent may be reconstructible, as are the Upper Chehalis examples in (31).

32.	Ch	=ač'a 'hand, finger, (lower arm)'	PS *akis, *=aka? 'hand, arm'
		čálš (√čáliš-) 'hand, (lower arm)'	Pš *kaláx 'hand, lower arm'
		=ucin- 'mouth, food, edge'	PS *=ucin 'mouth'
		qónš (qónuš-) 'mouth'	PS *qənúx ^w 'throat'
		=či 'water, river'	PS =k ^w a?, =k ^w u 'water'
		qá·? 'water, river'	PS *qalí? 'fresh water'

In many cases, the independent form includes the lexical suffix, as in (33); it is possible to identify the lexical suffix, even though (as in most of these examples) the root does not occur without a lexical suffix, and often cannot be separately glossed.

33.	Ch	q ^w al=án' (?=ear) 'ear'	=an'
		?ac/?éxt=k ^w lš (st/?=spirit.power) 'spirit power'	=ik ^w laš-
	Cm	q ^w úm=qn (?=head) 'head'	=qin
		s/kəm=cín (NOM/surface=mouth) 'mouth'	=cin
		kt/kəm=lwás (LOC/surface=chest) 'chest'	=lwas

Pairs such as those in (31) and (33) are far more common than cases where a lexical suffix is identical to, or partially similar to its independent equivalent.

There are certainly parallels between lexical suffixes and noun incorporation. Lexical suffixes, like incorporated nouns can be thematic instruments, locatives, or "predicate objective[s]" (Sapir 1911:265/1990 [1989]:42). They may also be seen as adverbial in nature, like incorporated nouns and some "derivative" suffixes in Yana:

Morphologically the incorporated noun of Yana is to be considered as on a par with the numerous derivative suffixes of the verb, as is shown, among other things, by the fact that it may be immersed, as it were, in these, some of the preceding, others following the incorporated noun. The noun, then, when incorporated, is adverbial

¹³ The word for 'fire' is morphologically complex: s/q^wét-w-n (NOM/burn-IMPF-3SUBJ), and is a nominalized form of 'it is burning'.

in character as regards its relation to the verb stem, that is, in so far as the derivative suffix is looked upon as adverbial in force rather than itself verbal with secondary position. (Sapir 1911:271/1990 [1989]:48)

Salishan lexical suffixes might be further compared to Yana, "where the verb is regularly followed only by elements that, however concrete in meaning, never occur independently" (as in Salish), and which led Sapir to conclude for Yana that "it seems more appropriate to regard noun incorporation as a form of derivation or, at best, as something between composition and derivation" (Sapir 1911:272/1990 [1989]:49). This is true of Salish, except that lexical suffixes are not only sometimes something between compounding and derivation — they are at other times both. That is, some lexical suffixes are clearly derived elements, some are lightly camouflaged compounds, and others are historically grammaticized elements.

However, the other problem still remains: lexical suffixes attach to noun stems as well as to verb stems,¹⁴ and all the problems about phonological similarities apply to both kinds of construction. Thus one might conclude, that, yes, Salish has noun incorporation, but such a claim can only apply in a specific language to that small number of verb-noun compounds and to verb-LS forms where the LS can be shown to derive from a [C + LS] form in that language. Since these processes apply elsewhere (i.e. to nouns), and since many LS *cannot* be shown synchronically, in any one language, to derive from [C + LS] forms, we ought to consider them all the same category, or at least limit the labels we use as much as possible. What we have is a range from pure compounding, through complex compounding (*wil 'canoe', *sqaxa? 'domesticated animal'), through derivation via [C + LS] forms, to pure grammaticization and derivation. At the final stage, where lexical suffixes "are lexically distinct from noun stems proper, they must be looked upon as grammatical elements pure and simple, however concrete their signification may seem" (Sapir 1911:252/1990 [1989]:29).

¹⁴ Of course, if it is necessary to maintain that there is no distinction between nouns and verbs at the lexical level, this point becomes irrelevant, although then using the term 'noun incorporation' would suggest that everything is a verb, rather than a neutral class. The point about dissimilarity between the suffixes and the independent forms still holds true, however.

Table 1. Saliish C₁ Correspondences

	Be	Cx	Pt	Se	Sq	Cw	Sa	Kl	Nk	Ld	Tw	Ti	Qn	Lo	Ch	Cz	Li	Th	Sh	Ok	Cm	Ka	Cr
1. =aqs	m	m	m	m	m	m	ŋ	ŋ	m	b	b	w	m	m	m	m	t		t		m		
2. =ix ^w acaŋ	t	t	t	t	*				t	b	*			t	t	*	t		t			t	t
3. =anak	m	m	m	m					t	b									m		m	m	
4. =asqŋ												*											
5. =ic'aŋ	ʔ,s	ʔ	ʔ	s-ʔ	ʔ	ʔ	ʔ	ʔ		s-ʔ				t	t			ʔ,s	ʔ,s	s	s	s	s
6. =o ^w mix ^w				(t)	t	t	t	t	t	d ²	y	y	j	y	y	y	q'	t	t	t	t	t	t
7. =amis		j	y	y	c	y	č	č	y				m	m	m	m	c	c					
8. =ucin	c	s	m	m?	m?						b	w											
9. =us	m	m?	m	m?	m?				m			t					χ	χ	χ	χ	χ	χ	χ
10. =ani?	(t')									j	y	y	w				m,t	s-p	s-p	s-p	s-p	s-p	s-p
11. =xan	ŋ	j	y	y	y	q					y	w						s	ʔ	ʔ	ʔ	ʔ	ʔ
12. =aqin		j	y	y	m													s	ʔ	ʔ	ʔ	ʔ	ʔ
13. =lq																		s	ʔ	ʔ	ʔ	ʔ	ʔ
14. =ups																		s	ʔ	ʔ	ʔ	ʔ	ʔ
15. =an-was																		s	ʔ	ʔ	ʔ	ʔ	ʔ
16. =usa?																		s	ʔ	ʔ	ʔ	ʔ	ʔ
17. =tx ^w																		s	ʔ	ʔ	ʔ	ʔ	ʔ
18. =ax ^w ac																		s	ʔ	ʔ	ʔ	ʔ	ʔ
19. =anak																		s	ʔ	ʔ	ʔ	ʔ	ʔ
20. =apsam																							
21. =aq																							
22. =wi																							
23. =ay'an																							
24. =a'nal																							
25. =ay																							
26. =mix																							
27. =ikup																							
28. =at'ci?																							
29. =akis																							
30. =lq ^w																							
31. =anux ^w																							
32. =axan																							
33. =k ^w a?																							
34. =awas																							

(Bold = aberrant or questionable; parentheses = problematic gloss.)

Appendix 1. Full forms for data in Table 1.

(orthographies modified for transcriptional uniformity)

- =aqs 'nose, point': Be *maaxsa* 'nose'; Cx *maqsan* 'nose'; Pt *maqsan* 'nose'; Se *maqsan* 'nose, bill, beak'; Sq *maqsan* 'nose'; Cw *maqsan* 'nose'; Sa *naqsan* 'nose'; Kl *naqsan* 'nose'; Nk *maqsan* 'nose'; Ld *baqsad* 'nose'; Tw *baqsad* 'nose'; Ti *waqsan* 'nose'; Qn *maqsan* 'nose'; Lo *maqsan* 'nose'; Ch *maqsan* (*maqsan*-) 'nose'; Cz *maqsan*- 'nose'; Cm *maqsan* 'nose'
- =ix^wacaŋ 'tongue': Be *tixca*, *tixcn*- 'tongue'; Cx *tix*^wsaŋ 'tongue'; Pt *tix*^wsaŋ 'tongue'; Se *tix*^wcaŋ 'tongue'; Cw *tix*^wsaŋ 'tongue'; Sa *tix*^wsaŋ 'tongue'; Kl *tix*^wsaŋ 'tongue'; Nk *tix*^wsaŋ 'tongue'; Qn *tix*^wcaŋ 'tongue'; Lo *tix*^wcaŋ 'tongue'; Ch *tix*^wcaŋ (*tix*^wcaŋ-) 'tongue'; Cz *tix*^wcaŋ- 'tongue'; Li *tix*^wcaŋ 'tongue'; Sh *tix*^wcaŋ 'tongue'; Ok *tix*^wcaŋ 'tongue'; Sp *tix*^wcaŋ 'tongue'; Cr *tix*^wcaŋ 'tongue'
- =anak 'excrement': Be *mnk* 'dung, excrement'; Cx *manač* 'excrement'; Pt *manač* *k^wisəl* 'shooting star'; Ld *bādč-ab* 'lie, fib'; Qn *manač* 'feces'; Ch *manč* (*manāč*-) 'excrement'; Sh *mnék* 'excrement'; Ok *mnúk* 'excrement'; Cm *mnúk* 'excrement'; Sp *mnék* 'excrement'
- =asqŋ 'day, sky': Sq *q'it* 'early daylight, morning'; Tw *stq'it* 'day, during daylight, early daylight'; Ti *qit*- '(eat) noon (meal)'; Ch *s-q'it-ač* 'today'; Qn *q'it* 'tomorrow'; Cz *q'it* 'tomorrow'; Li *s-q'it* 'day'; (Sh *sitq'it* 'day')
- =ic-aŋ 'hide, surface, blanket': Be *sic'm* 'leather'; *ŋic'a-mn-i* 'blanket'; Cx *ŋic'am* 'clothing, dress'; Pt *ŋic'am-m* 'dress, put on a blanket'; Se *s-ŋic'am* 'dress, any clothing'; Sq *ŋic'am* 'dress (intr.)'; Cw *ŋit^oam* 'dress oneself'; Sa *ŋit^oam* 'get dressed'; Kl *ŋic'am* 'dress (up)'; Ld *sŋic'ab* 'blanket'; Li *sŋic'aŋ* 'shoe, moccasin'; Th *ŋic'm*- 'have or put a blanket on'; *sic'm* '(woven) blanket'; Sh *ŋic'm-n-s* 'cover with a blanket'; *sic'm* 'blanket'; *s-ik-ŋic'e?* 'shirt'; Ok *sic'm* 'blanket'; Cm *sic'm* 'blanket'; Sp *sic'm* 'blanket'; Cr *sic'm* 'blanket'
- =ul=(a)mix^w 'earth, ground, land': (Se *támix*^w 'big waves, wind'); Sq *tmix*^w 'dirt, earth, land'; Cw *tamax*^w 'earth, ground'; Sa *təŋax*^w 'earth'; Kl *támix*^w 'dirt, land'; Tw *təbix*^w 'earth, land, country, dirt'; Qn *támix*^w 'earth, country, land'; Lo *tám'as* 'earth, ground'; Ch *támš* (*támš-*) 'earth'; Cz *támix* (*támíwal-i*) 'earth, land, dirt, ground, country'; Li *tmix*^w 'earth, land, soil, weather'; Th *tmix*^w 'earth, ground, land'; Sh *tmix*^w 'land, country, world'; Ok *tmx*^w=*ula?x*^w 'country, land, world'; Cr *tmix*^w=*ulmx*^w 'earth, soil, territory, country'
- =anis 'tooth': Cx *janis* 'tooth'; Pt *jinis* 'tooth'; Se *yanis* 'tooth'; Sq *yanis* 'tooth, teeth'; Cw *yanas* 'tooth'; Sa *čenas* 'tooth'; Kl *čenas* 'tooth'; Nk *yanis* 'tooth'; Ld *d'adís* 'tooth'; Tw *yadís*, *yadís* 'tooth'; Qn *janis* 'tooth'; Lo *yan?is* 'tooth'; Ch *yanis* (*yanis-*) 'tooth'; Cz *yanis*- 'tooth'; (Li *q'ans* 'toothache')
- =ucin 'mouth': Be *cuca* 'mouth'; Cx *susin* 'mouth'; Pt *θúθin* 'mouth'; Se *cúcin* 'mouth'; Sq *cucin* 'mouth'; Cw *θáθan* 'mouth'; Sa *θáθan* 'mouth'; Kl *cúcán* 'mouth'; Nk *θúθen* 'mouth'; Tw *cucíd* 'mouth, lips'; Li *cúcin* 'mouth'; Th *cúcn* 'mouth'
- =us 'face, eye': Be *musa* 'face'; Cx *máŋus* 'head, face'; Pt *sx^w-mús-təM* 'face'; Se *məŋús* 'head'; Sq *smíŋús* 'head'; Tw *bús* 'face'; Ti *wús* 'face'; Qn *mús* 'eye'; Lo *mús* 'eye'; Ch *mús* 'eye'; Cz *mús* 'eye'
- =ani? 'ear, side of head': (Be *i'in* 'dorsal fin'); Ti *dən* *√t'áni* 'ears (pl. only)'; Li *A'ána?* 'ear'; Th *A'én'i* 'ear'; Sh *A'éne* 'ear'; Ok *i'ina?* 'ear'; Cm *i'ána?* 'ear'; Sp *i'éne?* 'ear'; Cr *i'ine?* 'ear'

11. =*xan* 'foot, lower leg' : Be *ʔixa*, *ʔixn-* 'foot, leg'; Cx *ʔásan* 'foot'; Pt *yašan* 'leg'; Se *yašan* 'foot, leg'; Ld *ʔásad* NLD 'foot'; Tw *yašád* 'foot, lower leg'; Ti *yašan* 'leg (knee down)'
12. =*aqin* 'head' : Cx *máqin* 'hair'; (Pt *sxiqín* 'hair'), Se *máqin* 'hair'; (Sq *qáqn* 'house post'), Kl *méqin* 'head'; Ti *waqín*, *weqín* 'hair (on head)'; Li *máqin* 'hair'; *s-t-qín* 'pillow'
13. =*iq* 'penis' : Tw *spólóq* 'penis'; Lo *spólq* 'penis'; Ch *spólq* 'penis'; Th *spéyeg*, *pólqeg?* 'penis'; Sh *s-péllq*, (*spólq*-*dc*) 'penis'; Ok *spálq* 'penis'; Cm *spólq* 'penis'; Sp *spálq* 'penis'
14. =*ups* 'tail, rump' : Ti *s/úús* 'animal's tail'; Lo *súps*-*ən'əč* 'tail'; Ch *súps*-*n'č* 'tail'; Cz *s?áps* 'diarrhoea, excrement'; *súps*-*n'k* (*súps*-*n'č-i*) 'tail'; Th *súpe?* 'tail of animal'; Sp *súps* 'tail'
15. =*ian*=*was* 'torso, chest, insides' : Cw *s?inus* 'breastbone, chest'; Kl *yánəwas*, *yénəwas* 'heart'; Ld *yədwás* sk 'heart'; Tw *yədwás* 'heart'; (Ti *yəg'at*, *ig'at*- 'know'); (Sh *ʔe?nwen-s* 'say bad things about s.o.'), (Ok *ʔanwint* 'sense, feel s.t.'), (Sp *ʔenwen* 'feel')
16. =*usa?* 'small round object' : Sq *ʔúsa?* 'large blueberry'; *ʔuʔús*, *ʔəwʔús* 'eggs'; Ld *ʔaʔús* 'egg' (was); Tw *ʔaʔús* 'ling cod eggs'; Li *ʔúsa?* Fñ 'huckleberry'; Th *ʔeʔúse?* 'egg (of bird)'; Sh *ʔúʔse* 'egg'; Ok *ʔaʔúsa?* 'egg'; Cm *ʔaʔúsa?* 'egg'; Sp *ʔuʔúse?* 'egg'; Cr *ʔúse?* 'eggs'
17. =*tx*^w, =*at*=*tx*^w, =*aw*'=*tx*^w 'house, lodging' : Qn *cítx*^w 'board'; Li *cítx*^w 'house'; Th *cítx*^w 'house'; Sh *cítx*^w 'house, lodging'; Ok *cítx*^w 'house'; Sp *cítx*^w 'house, lodge'; Cr *cítx*^w 'house'
18. =*ax*^w*ac* 'chest' : Ch *táx*^w*c* (*táx*^w*ac*-) 'chest, breast'; Cz *táx*^w*ac*- 'chest'; Li *táx*^w*ac* 'chest'
19. =*anak* 'intestines, belly' : Se *s-t'únač* 'feathers'; Qn *t'ínač* 'tail'; Lo *sn'əč* 'area around rectum'
20. =*apsam* 'nape, back of neck' : Cw *təpsəm* 'neck (back of neck)'; Sa *téčəŋ* 'neck, back of neck'; Kl *táčəŋ* 'back or nape of neck'; Nk *tépsəm* 'neck'. (Although the initial consonant does not match, could Qn *cáspan* 'neck'; Lo *č'əsp* 'neck'; Ch *č'əspn* 'neck'; and Cz *k'əspán*- 'neck' be connected through metathesis of *ps*?)
21. =*aq* 'penis, sexual organ' : (Be *nu-√pq't* 'to fart'); Ch *pəq* 'anus'; Cz *pəq* 'uterus (?)'
22. =*wil* 'canoe, container' : Lo *swít* 'canoe'; Ch *wít* (*wíli*-) 'canoe'; Cz *wít* (*wíl-i*) 'canoe, boat, car'
23. =*ay'an* 'net, trap' : Qn *táʔəʔə* 'net'; Lo *táʔi* 'set-net'; Ch *tá-ya?* 'fishnet'
24. =*atnat* 'throat, mouth' : Sa *hətnət* 'darn you!'; Kl *hətnət* 'damn you, darn you!'; Ld *cətdálb* 'breath'
25. =*ay* 'tree' : (Se *səya* 'tree'); Sq *sláy* 'bark of tree, thick bark, fir bark'; Nk *sl'éy* 'fir bark'
26. =*mix* 'person, individual' : Cx *túmiš* 'man'; Se *s-túmiš* 'man'
27. =*ikup* 'fire(wood)' : Lo *máčəp*, *mú-čəp* 'fire'; Cz *mək*^w*up*- 'fire'
28. =*atč'i?* 'body, meat, inside(s)' : Sh *sítč'u* 'moccasin, shoe, footwear'
29. =*akis*, =*ak-a?* 'hand, forearm' : Li *s-k'ákst* 'hand, (lower) arm'; (Sh *s-péke* 'gloves'), (Ok *spíkst* 'gloves'), (Cm *s-páks-mn* 'pestle'), (Sp *spéčst* 'gloves')
30. =*iq*^w(*an*) 'head, top' : Pt *sx'iq*^w 'bald-headed'; Ld *šiq*^w NLD 'hat'
31. =*anux*^w 'weather, season, year' : Li *zánux*^w- 'year'
32. =*ašan* 'upper arm, shoulder' : Pt *θáθəšan* 'shadow'
33. =*k'a?*, =*k'u* 'water' : (Cm *sxáuk*^w 'Chelan Depot')
34. =*awas* 'body, waist, middle' : (Cm *t-q'áw's* 'two')

suffixes not found with an initial consonant:

- =*ap* 'bottom, rear, base'
- =*min* 'implement'

- =*tn*, =*tən* 'implement, place or time for'
- =*atp* 'vegetation, plant'
- =*ay-alt* 'offspring, child'
- =*als* 'stone'
- =*al-awas* 'breast, chest, middle'
- =*alaq*^w 'tree, long object'
- =*ikin* 'back'
- =*aq* 'penis'

additional suffixes from Haeberlin (1974):

- =*alqs* 'shirt' 4.16
- =*alaq* 'wind' 4.24
- =*mxx*^w 'breast' 4.27
- =*ałx*^w 'house' 4.30
- =*el*, =*elst*(*n*) 'weapon' 4.33
- =*elx*^w, (=eł ?), =*atl* 'dead' 4.37
- =*al* (in adverbial numerals) 4.38
- =*al* 'road' (?) 4.40
- =*aluk* 'hide' 4.42

Appendix 2. Notes to Table 1.

1. =aqs 'nose'. The consonants shown are all regular developments of Proto-Salish *m.
4. =asq't 'day, sky'. Asterisks here and elsewhere on the Table indicate suffixes that are the same as full forms. In this case the suffix occurs only in Interior Salish.
5. =i'ca? 'hide' has full forms with either s or ʔ, and in Sechelt, Lushootseed, and Thompson with the two together. The original full form must have begun with ʔ, and s is a prefix. The ʔ of this sequence was lost in many languages.
7. =anis 'tooth'. The consonants shown are all regular developments of Proto-Salish *y, except for the q' in Lillooet. The development of the Lillooet form is unknown.
8. =ucin 'mouth'. The consonants shown are all regular developments of Proto-Salish *c.
9. =us 'face, eye'. The mʔ in Comox, Sechelt, and Squamish may represent a root √mʔ-, which only coincidentally looks like the m of the full form.
10. =aniʔ 'ear'. A' is the regular development from Proto-Salish *t' in the Northern Interior Salish languages.
11. =xan 'foot'. In the Bella Coola free form, i is apparently from *y, with an epenthetic ʔ preceding it.
12. =aqin 'head'. There are three unexplained [C + LS] forms, one each in Pentlatch, Squamish, and Lillooet.
13. =lq 'penis'. This suffix may not belong at all; it may be related to 21. =aq.
15. -i/an=was 'torso, chest'. If I am correct in reconstructing this suffix as the suffix =awas 'body, middle' (number 34) preceded by an expanding suffix, then it is difficult to explain these initial consonants. Perhaps the expanding suffix was inserted between an original consonant and what became the lexical suffix. The y's might be consonantizations of i. The consonants of the Tillamook and Interior Salish forms do not fit well, and may represent a different suffix, perhaps =iwan 'belly, emotions'; if so, this suffix does not go back to Proto-Salish, although it is an expansion of one that does.
16. =tx' 'house'. Reconstruction of this suffix is complicated. Kuipers may be correct in separating the t. Nevertheless, with the Quinault correspondent matching the Interior forms with c, a full form *cítx' is indicated.
18. =ax'ac 'chest'. Although there are only three forms to make up this set, the distribution is compelling.
19. =anak 'intestines, belly'. The forms from Sechelt and Quinault would be convincing for *t', but the Lower Chehalis form complicates the situation.
20. =apsam 'back of neck'. This is not a strong case. The four languages with t are clustered together on the coast.
21. =aq 'penis'. The q' does not match here, so this set may not represent a Proto-Salishan full form. The suffix is not well attested in the family. It is tempting to try to relate these forms to 13. =lq 'penis'.
22. =wil 'canoe'. Although a full form occurs only in Tsamosan, the suffix occurs throughout Salish.
23. =ay'an 'net, trap'. Again the full form is found only in Tsamosan, but the suffix is widespread.
24. =aʔnaʔ 'throat, mouth'. The Saanich and Klallam forms with h may represent special derivatives, particularly since the attested forms are verbs, rather than nouns.
25. =ay' 'tree'. The Sechelt form is unexplained. This suffix occurs quite widely, often as a frozen and unsegmentable part of tree names.

Reconstruction of all the remaining full forms is problematic, either because the attestations of full forms are from only two languages near each other, because there is only one attestation, or because of inconsistencies such as those for 29 and 30. Further evidence, if it turns up, may clarify some of these problematic cases. More than one branch of Salish is represented through number 19. No free form has been found for several affixes listed at the end of Appendix 1, and a search has not yet been made for others that were reconstructed only recently, and after Table 1 was constructed.

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