Historical Linguistics 1997

EDITED BY
Monika S. Schmid
Jennifer R. Austin
Dieter Stein

Offprint
1. Introduction

The past decade has seen increasing interest in processes of grammatization, by which independent lexical items evolve over time into grammatical affixes. Grammaticization is known to involve a constellation of functional and formal changes. Functional changes include shifts from concrete, specific meaning to more abstract, general meaning, and from greater to lesser expressive value. Formal changes include a loss of categoriality, increasing bondedness with a host stem, and an erosion of phonetic substance. Such processes have been observed, for example, in the evolution of verbs to auxiliaries, to clitics, and finally to tense affixes, and from nouns to adpositions, to clitics, and finally to case affixes (Lehmann 1985:304, Hopper and Traugott 1993:106-7).

It is generally agreed that functional change precedes and in fact drives formal change. Formal fusion has been assumed to be the last stage in the process. Heine, Claudi, & Hünnemeyer (1991:15) remark, for example, that “functional processes chronologically precede both morphosyntactic and phonetic processes; that is, if a linguistic unit undergoes both desemanticization and cliticization, then the former is likely to precede the latter in time”. Hopper and Traugott (1993:7) note that “Most linguists would agree that there is a ‘cline of grammaticality’ of the following type:

CONTENT ITEM > GRAMMATICAL WORD > CLITIC > INFLECTIONAL AFFIX"

Lexical items are assumed to become ‘grammatical words’ before bonding as clitics and then later evolving into affixes. Indeed numerous documented cases of grammaticization provide evidence of just this sequence. A well-
known example is the evolution of the English future tense from an independent verb of volition, then to the modal auxiliary will, and finally to the enclitic =I of he’ll.

There is good evidence, however, that this sequencing of individual functional and formal effects is not universal. The Central Alaskan Yup’ik suffix -te- ‘catch’ or the Bella Coola suffix -lst ‘rock’, for example, show concrete meanings suggesting only the earliest functional signs of grammaticization. At the same time, their forms, simple short suffixes, suggest an advanced stage in the process. The same languages also contain suffixes that differ from our expectations in another way. Yup’ik -rpagninarqe- ‘smell strongly of’ or Bella Coola -naluslxsd ‘between the toes’ are highly specific functionally, and quite long in form; it is surprising that they are affixes at all. Here it will first be shown that these markers do qualify as affixes on both functional and formal grounds. Next we will see that the seeming discrepancy between their functional and formal development can be attributed to different paths of evolution from that described above, paths that are actually not uncommon cross-linguistically. The identification of these paths in turn provides an explanation for a constellation of characteristics typical of the kinds of polysynthetic languages examined here.

2. Verb-like affixes

Languages of the Eskimo-Aleut family provide good examples of suffixes with surprisingly concrete verb-like meanings. Examples cited here are drawn from Central Alaskan Yup’ik (Eskimo) of southwestern Alaska. The material comes from the speech of members of the Charles family of Bethel: Mrs. Elena Charles (EC), Mrs. Elizabeth Charles Ali (EA), Mr. George Charles (GC), and Mr. John Charles (JC). Good general references on the language are Jacobson 1984, 1995, and Miyaoka 1996.

The basic morphology of Eskimoan languages is straightforward. Both verbs and nouns begin with a single root (traditionally termed a ‘base’ by Eskimologists), followed by any number of derivational suffixes (termed ‘postbases’), then an inflectional suffix complex (termed an ending). The language is extremely rich in suffixes: Jacobson 1984 lists over 450 derivational suffixes and even more inflectional ones.

On verbs, the inflectional suffix complex consists of an obligatory mood marker followed by a pronominal suffix specifying the core arguments.
On nouns, the inflectional suffix complex indicates number, case, and possession. (Absolutives bear no case suffix.) Possession can be shown by transitive pronominal suffixes similar in form to those on indicative verbs, with the possessor corresponding to the ergative argument and the possession to the absolute.

Roots in Yup’ik show the kinds of meanings typical of roots cross-linguistically, though, like vocabulary in any language, many are culture-specific: agtar- ‘to shoot’, ceg- ‘to cut fish for drying’, nayug- ‘to hollow out, skin a seal so that skin is not split’, yuu- ‘to disembark, take off clothing, remove from container’, cena ‘shore, coast, rim’, minaq ‘food set aside for someone’, qelta ‘fishscale, bark of tree, eggshell, peel’, qellukaq ‘aged seal flipper’, tepa ‘smell, aroma, odor, aged fishhead’. Many Yup’ik suffixes have functions typical of affixes cross-linguistically: -vkar- CAUSATIVE, -cuarr-DIMINUTIVE, -ller- PEJORATIVE, -lria NOMINALIZER, -u- VERBALIZER ‘be’, -llru-PAST, -k DUAL, -mun ALLATIVE CASE. Some, like the causative, are attached only to verb stems, and others, like the pejorative, are attached only to noun stems. Some, like -qainer- ‘only, merely’ may be attached to either. Some, like the past tense, preserve the lexical category of the word, while others shift it, like the nominalizer that creates nouns from verbs.

In addition to these, Yup’ik contains a large number of other suffixes with meanings more like the verb roots of other languages. One that follows verb stems is -yartur- ‘go’.

“I’m gonna go to bed.”
Languages with suffixes like these generally have full lexical verbs with similar translations. Yup’ik also contains a root ayag- ‘go’.

(4) Massiinarpuq-llu ayagiiganani.
    massiinar-puk=llu ayagi-gigate-na-ni
    motor-1D0/3SG=to0 go-unable-SUBORDINATIVE-3SG
    “And our motor wouldn’t start.”

The root and suffix counterparts would not coexist so systematically if their functions were precisely equivalent. Suffixes like -yartur- serve special lexical and discourse functions. Lexically, they serve to derive labels for nameworthy concepts. In (3), the speaker packaged going to bed as a unitary action, expressed in a single word. The going was simply an element of the larger event. When individual attention is to be focussed on the going itself, the root is used, as when the motor ‘couldn’t go’ in (4).

Alternations between roots and suffixes also function on the discourse level in Yup’ik to regulate the flow of information in connected speech. Suffixes can serve to background information that is established, predictable, or incidental. That dynamism can be seen in (5). When Mrs. Charles first introduced the idea of beginning, she used the full root ayagnir- ‘begin’. In the following line, she backgrounded this now established idea no longer in need of special attention, with the inceptive suffix -nge-.

(5) tuai wani-wa-gguq ayagnirluu.
    tuai wani=wa=gguq ayagnir-lu-a
    so here=EMPHATIC=EVIDENTIAL begin-SUBORDINATIVE-1SG
    “Right now, I’m getting started.
    akikiungeqatartua.
    aki-kiur-ngne-qatar-lu-a.
    money-prepare-begin-FUTURE-INDICATIVE-1SG
    I’m going to start making objects to sell”

...ing’, -cilli- ‘appear to have been’, -cite- and -vkar- ‘let, allow, permit, cause, compel’, -curlag- ‘be interfered with while’, -ke- ‘find something to be’, -kunayaaqe- ‘consider, think about’, -yukaar- ‘be ready to’, -lngu- ‘be tired of’, -qataar- ‘slowly start to’, -aur- ‘continue to’, -yunrite- ‘continue not to’, -yuumiir- ‘yearn to’, -yuumiite- ‘not care to’, -yuumiirte- ‘suddenly cease wanting to’, -nrir- and -nanrir- ‘stop’ (Jacobson 1984). Many languages contain some grammatical affixes with similar functions, such as andatives (‘go and’), causatives (‘let, allow, permit, cause, compel’), abilitatives (‘be able to’), desideratives (‘want to’), conatives (‘try to’), inceptives (‘begin to’), and continuatives (‘continue to’). They represent elements of meaning frequently packaged as components of larger concepts.

Perhaps more interesting are a set of suffixes with verb-like meanings that are attached to noun stems.

(6) Some Yup’ik verb-like suffixes to nouns Jacobson 1984

| Suffix | Meaning
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>-cur-</td>
<td>‘hunt, seek, check’</td>
</tr>
<tr>
<td>-klute-</td>
<td>‘acquire, claim as own’</td>
</tr>
<tr>
<td>-laar-</td>
<td>‘get a new’</td>
</tr>
<tr>
<td>-tur-</td>
<td>‘eat, wear, use’</td>
</tr>
<tr>
<td>-lqir-</td>
<td>‘take along’</td>
</tr>
<tr>
<td>-ssaag-</td>
<td>‘fetch easily’</td>
</tr>
<tr>
<td>-li-</td>
<td>‘make’</td>
</tr>
<tr>
<td>-liur-</td>
<td>‘work, play with’</td>
</tr>
<tr>
<td>-gguir-</td>
<td>‘go by way of, through’</td>
</tr>
<tr>
<td>-kuir-</td>
<td>‘go along, go following’</td>
</tr>
<tr>
<td>-(a)r-</td>
<td>‘say’</td>
</tr>
<tr>
<td>-lkte-</td>
<td>‘make noise involving’</td>
</tr>
<tr>
<td>-ninarge-</td>
<td>‘smell or taste like’</td>
</tr>
<tr>
<td>-cugninarqe-</td>
<td>‘smell or taste like’</td>
</tr>
<tr>
<td>-(ng)tr-(ar)-</td>
<td>‘injure, be injured in’</td>
</tr>
<tr>
<td>-(ng)ar(ar)te-</td>
<td>‘hit, get hit in one’s’</td>
</tr>
<tr>
<td>-kegci-</td>
<td>‘have good ...’</td>
</tr>
<tr>
<td>-kite-</td>
<td>‘supply’</td>
</tr>
<tr>
<td>-nqgeer-</td>
<td>‘have’</td>
</tr>
<tr>
<td>-lir-</td>
<td>‘have lots of, add’</td>
</tr>
<tr>
<td>-liqge-</td>
<td>‘to have poor quality’</td>
</tr>
<tr>
<td>-tar-</td>
<td>‘for there to be’</td>
</tr>
<tr>
<td>-tange-</td>
<td>‘for there now to be’</td>
</tr>
<tr>
<td>-(ng)te-</td>
<td>‘lack’</td>
</tr>
<tr>
<td>-(ng)ittqe-</td>
<td>‘suffer from lack of’</td>
</tr>
<tr>
<td>-(ng)trite-</td>
<td>‘no longer have’</td>
</tr>
</tbody>
</table>

These suffixes do have strikingly root-like translations. Indeed, their cognates in related languages have sometimes been analyzed as roots on the
basis of their English glosses. They clearly qualify as affixes both formally and functionally, however.

Formally, the difference between roots and suffixes is very clear in Yup’ik. Roots always appear at the beginning of words, and only at the beginning of words. They may constitute words in themselves with only inflectional endings, which for nouns may be zero. Suffixes never appear at the beginning of words, but always follow roots.

The suffixes differ functionally from roots as well, though the differences are sometimes subtle. Semantically, despite their often concrete and specific translations, many have meanings that are more abstract, general, and diffuse than those of their root counterparts. The suffix -te-, for example, is often translated ‘catch’ (Jacobson 1984).

It is sometimes translated ‘gather’ or ‘get’ (Jacobson 1984:568).

The same suffix is also often translated ‘go to’ (Jacobson 1984:568, 1995:260).

Mrs. Ali points out that the suffix is not actually polysemous among different specific meanings. A general sense of ‘obtaining’ can be seen across
most of the constructions: obtaining game, wood, eggs. The differences among
the translations ‘catch’, ‘gather’, and ‘find’ come more from the kind of
activity required to obtain the objects in question: seals must be chased, but
grass can be gathered. Beached whale carcasses are neither chased nor
gathered: one comes across them. Yet the meaning of the suffix is more than
general obtaining, as can be seen in its use with destinations and times.
Semantic links can be imagined, such as spatial metaphors involving attaining
a destination, or temporal metaphors involving arrival at the end of a period of
time.

The suffixes also often show unpredictable, idiomatic meanings.

(12) yulk ‘person’ yugtuq ‘he committed murder’
kuvya ‘fishnet’ kuvyattuq ‘he caught fish with a net’
kass’aq ‘white person’ kass’artuq ‘he went to the city to shop’

The verb-like suffixes also differ from independent verbs in productivity.
The productivity of independent verbs is essentially syntactic, usually
constrained primarily by semantic compatibility. With suffixes, however,
speakers usually know not only whether a certain root-suffix combination is
possible, but also whether they have heard it before. Like all derivational
morphology, they vary in their productivity. The suffix -te- ‘catch, get, gather,
find, obtain’, for example, appears with a number of nouns, as seen in (7)-(12).
Speakers say neqtuq ‘he caught fish’ (neqa ‘fish’), tuntuvagtuq ‘he caught a
moose’ (tuntuvak ‘moose’), and yaqulegtuq ‘he caught a bird’ (yaqulek ‘bird’).
They know, however, that one does not say *luqruuyagtuq ‘he caught a pike’.
The gap is not predictable on semantic grounds: catching pike (luqruuyak) is a
frequent event.

Like the verb-suffixes following verb roots, the suffixes attached to noun
roots also serve special lexical and discourse functions. They provide a lexical
device for deriving new words for recurring ideas requiring names. Many of
these words are coined to represent customary activities, like those named in
the passage below.

(13) ... cali-brta-t-gguq, ikanrailuteng, EC
work-PARTICIPAL.3PL=HRS ydkamrar-li-lu-teng
basket.sled-make-SUBORDINATE-3PL
‘[He saw them] working, basket-sled-making,
qamigaute-lu-luteng talyaltituteng
qamigaute-li-li-lu-teng talyar-li-li-lu-teng
kayak.sled-make-SUBORDINATE-3PL fishtrap-make-SUBORDINATE-3PL
kayak-sled-making, fishtrap-making ...’
Many of the suffixes listed earlier in (6) represent elements of recurring, nameworthy activities, such as hunting, catching, gathering, working with, going by way of, eating, wearing, using, making, and preparing things.

Many of the verb-like suffixes indicate little more than the presence or absence of objects. A large number have translations such as 'be', 'be there', 'have', 'have much', 'be absent', 'lack', and 'need'. Others serve primarily to bring participants onto the scene or remove them, such as those translated 'acquire', 'fetch', 'catch', 'obtain', 'supply', 'make', 'prepare', 'take along', 'remove', and 'deprive of'. Suffixes like these are used pervasively to control the flow of information through discourse.

As is by now well known, speakers tend to present one major new idea at a time in natural connected speech. Significant new pieces of information tend to be introduced in separate intonation units or prosodic phrases (Chafe 1994). An important new referent and new action, for example, are seldom introduced within the same phrase. The suffixes of presence and absence contribute little information of their own, serving primarily to introduce referents into the discourse. Their formally subordinate status reflects their subordinate function. The example in (14) was part of a description of a place the family used to visit on a small river. The only function of the suffix -tar- 'for there to be' in this passage is to introduce the island.

(14) qikertarluni  
qikertar-tar-lu-ni  
island-for there.to be-SUBORDINATIVE-3SG  
qıkertarq  angluni.  
qikertar  ange-lu-ni  
island  large-SUBORDINATIVE-3SG  
the island is big.”

The special discourse function of the suffixes becomes clearer when their uses are compared with those of roots. The passage in (15) is an excerpt from a telephone conversation between Mrs. Ali and her brother, Mr. Charles. The point of the lines with roots 'be there' and 'be here', was not to introduce a participant (M) into the discourse. That had already been accomplished. The focus was on her actual presence.
Languages from several other North American languages, including those of the Tsimshianic, Salishan, Wakashan, Chimakuan, and Sahaptian families, also contain affixes with concrete, verb-like translations. Their similarities to the Yup’ik suffixes are striking. As in Yup’ik, the affixes generally coexist alongside of roots with similar meanings, but they differ from their root counterparts both formally and functionally. Formally, they must always occur attached to a root. They vary in their individual productivity, but they are never combined as freely with roots as independent verbs are combined syntactically with other words. They show semantic resemblances to the Yup’ik suffixes as well: their meanings tend to be more general, abstract, and disparate than those of their corresponding roots. They tend to represent elements of meaning that recur in nameworthy concepts (for vocabulary building) or they indicate the presence, absence, arrival, or departure of entities (for regulating the flow of information in discourse).


As can be seen, their meanings can be quite broad, such as \( s\)\textsuperscript{a} ‘pick, harvest, catch, process’.
Bella Coola or Nuxalk, a language of the Salishan family of British Columbia (unrelated to either Yup'ik or Nisg̱a’a) also shows verb-like prefixes (Nater 1981:93-4). Again the kinds of meanings represented are strikingly similar to the Yuk’ik suffixes.

(17) tam- ‘make, construct’ tix- ‘catch’
    tutu- ‘prepare, work on’ kat- ‘gather, pursue, hunt’
    txuT- ‘go to (place)’ ıs- ‘gather, take in, consume’
    ıs- ‘crave’ ıs- ‘to consider the taste of’
    ın- ‘be fond of’ ıt- ‘speak the language of’
    it- ‘wear’ ıt- ‘don, put on’
    ıs- ‘have, contain, use’ ıt- ‘have, possess’
    ıkt- ‘lack’ ıt- ‘have much’
    ınus- ‘be deprived of’

Many of these prefixes also have quite broad ranges of meaning, such as kat- ‘gather, collect, pursue, hunt’, ıs- ‘go for, gather, eat’, and ıs- ‘have, contain, use’.

3. Noun-like affixes

There are also languages in North America that contain affixes with strikingly noun-like translations. The Salishan languages of the Northwest are particularly rich in such markers, known as ‘lexical suffixes’. Examples cited here come from Bella Coola, which is documented in several major works: Nater 1984, 1990, Davis & Saunders 1980, 1997. Several articles deal specifically with the lexical suffixes: Davis & Saunders 1973, Saunders & Davis 1975a,b,c.

(18) -ixw ‘head’ -an ‘ear’
    -us ‘face’ -aq’s ‘eye’
    -ixs ‘nose’ -uc ‘mouth’
    -alic ‘tooth’ -ali ‘tongue’
    -ams ‘jaw’ -an ‘temple’
    -apsm ‘side of neck’ -alxi ‘back of head, neck’
    -ath ‘throat’ -a ‘whole leg’
    -ak ‘hand’ -a ‘foot’
    -anl ‘side’ -an ‘side, corner’
    -almx ‘breast, teat’ -als ‘surface’
    -a ‘bottom’ -ic ‘feather’
    -nk ‘base, bottom’ -nalus ‘joint’
    -it ‘genitalia’ -ik ‘back’
    -lqs ‘tail’ -li ‘skin, bark’
Salish languages vary in the sizes of their suffix inventories, but many have quite large sets. Dale Kinkade (p.c.) has identified around 200 for Upper Chehalis, for example.

The suffixes appear in both nominals (19) and predicates (20) (Nater 1984, 1990).

Salish languages vary in the sizes of their suffix inventories, but many have quite large sets. Dale Kinkade (p.c.) has identified around 200 for Upper Chehalis, for example.

The suffixes appear in both nominals (19) and predicates (20) (Nater 1984, 1990).

The suffixes derive lexical items, coined for specific purposes. Their meanings are not necessarily equal to the sum of the meanings of their parts.

The lexical suffixes generally have root or stem counterparts with similar translations.

Despite their translations, the stems and their suffix counterparts differ in sometimes subtle but important ways. As might be deduced from the examples in (19)-(21) above, the suffixes tend to have more general, abstract, and disparate meanings than stems. They often include among their meanings
metaphorical extensions of their most concrete senses. Thus while the stem saxa refers specifically to the hand or forearm of a person, the suffix -ak is used not only for a hand or arm, but also for the paw of an animal, a glove, and even work. The extensions are not always predictable, but it is often possible to imagine the motivation behind them. Describing Saanich, another Salish language, Montler (1986:66) concludes that “each lexical suffix can probably best be viewed as representing a complex network of associations rather than a concrete or abstract base from which metaphorical extensions are made”. Bella Coola shows the same patterns.

(23)  
-iks  ‘nose, point, terminus’
-ams  ‘jaw, trap, wedge’
-aqwig ‘eye, glasses, spectacles, paint, color’
-lič  ‘skin, bark, side, exterior surface, sheet, cloth’
-a x  ‘leg, step, bush, tree, stick, wood, log, boat, food, dish, name’
-i xw ‘head, top, hair, sprout, plant top, hat, lid, lock, door’
-uc  ‘mouth, orifice, speech, food, eating, door, edge, shore, beach, rim of knife, tide, channel, river, water’
-a x  ‘whole leg, bush, tree, wood, log, pole, boat, food item, name, step’
-als  ‘vertical surface, hill or mountain side, liquid container’
-uč  ‘body, ball, rock, house, egg, moon, container, vehicle, other round objects, soup, stew, tea, juice’

The suffixes are categorically vague as well. The suffix -at is used not only for ‘foot, lower leg, tracks, shoes, vehicle’, but also for actions and states involving the feet, such as walking and standing in general. The suffix -uc ‘mouth’ is used for the mouth and also activities involving the mouth, such as eating and speaking.

Because of their ranges of uses, the Bella Coola suffixes often have multiple stem counterparts. Thus the suffix -ant, translated variously as ‘cloth, blanket, clothing, fabric, texture, building, structure’, could be said to have among its stem counterparts čammi ‘blanket’, ḍikwta ‘clothing’, suł ‘structure, building’ and many others. The suffix -ut ‘round object’ could be compared to yalqu-t ‘ball’, ɪxt ‘rock’, suł ‘house’, qpa ‘egg’, and others. The grammatical roles of entities invoked by suffixes are not overtly specified in the same way as the roles of those referred to be stems. They are not subjects or objects, but simply indicate the involvement of a kind of entity. In Bella Coola, core arguments can be identified by the pronominal suffixes on verbs (Agnes Edgar in DS 1980:151).
(24)  
ak-nix-tuk\textsuperscript{w}  ka-plik-m-\textsuperscript{f}  
meet-LIMITED.CONTROL-you/us IRREALIS-TUT.T.OVER-MED.PASS-we  
"You'll cause us to have an accident if we tip over."

Entities invoked by the lexical suffixes are not represented by the pronominal suffixes (Saunders & Davis 1975:363).

(25)  
qué-\textit{at-ic}  
wash-foot-I/him  
"I am going to wash his foot or feet" ("I am going to foot-wash him.")

\textit{qué-\textit{at-ic}}  
wash-foot-I/them  
"I am going to wash their feet." ("I am going to foot-wash them.")

The nature of the involvement may be as a semantic patient as in (25), as an instrument, as a location, or as something else, but it is not overtly specified. The suffix simply indicates an association of some unspecified kind.

(26)  
kaw-\textit{ams}  
brace-wedge = to brace something with a wedge  
\textit{tp-ik}  
spread-surface = to put (a hide) on a stretcher

A verb may contain more than one suffix, each in a different role (DS 1980:220.148).

(27)  
\textit{3p-\textit{als-ak-im-kw}}  
grasp-side-hand-PASSIVE-QUOTATIVE  
"she grabbed the blade (of the knife)." ("She hand-blade-grabbed")

The suffixes are used in ways similar to those of the verb-like suffixes described earlier. They function lexically to derive labels for nameworthy concepts, as in (19)-(21). They are also used to regulate the flow of information through discourse, backgrounding secondary information. In a tale told by Agnes Edgar, a spider was helping people return to earth. He told some them to get into something that turned out to be a basket. At the first identification of the basket, the stem \textit{la} was used. To emphasize that it really was a basket, the full noun was used again (Agnes Edgar in DS 1980:30. 22).
After catching on some clouds, the basket finally reached the earth. This time the basket, now an established part of the scene, was mentioned only with the suffix -ut.

Noun-like affixes with seemingly concrete meanings appear in other languages as well. Nootka, a language of the Wakashan family of British Columbia, shows a sizable inventory of such suffixes (Rose 1981). The meanings encoded are strikingly similar to those found in the Salishan sets, with a preponderance of body parts. As in the Salish languages, the meanings of many of the suffixes have been extended metaphorically. The Nootka suffix -qi ‘head’ is also used for ‘end’ or ‘promontory’, for example. As in Bella Coola, they do not serve as grammatical arguments, but simply indicate the involvement of a kind of entity. They also show the same kinds of functions as the Bella Coola suffixes, deriving lexical items and shaping the flow of information through discourse.

4. The diachronic sources of lexical affixes: compounding

These verb-like and noun-like lexical affixes clearly qualify as affixes on formal grounds: they cannot serve as the bases of words in their own right, but must always be attached to a root; they form relatively closed classes; they show signs of functional grammaticization typical of affixes, which have more general and abstract meanings than roots. Yet at the same time, they remain decidedly more root-like in certain ways than most affixes cross-linguistically. Though they belong to relatively closed classes, the classes can be large: there are as many as 200 lexical affixes in some Salishan languages, and over 400 derivational suffixes in both Yup’ik and Nootka. Importantly, though they can be more general and abstract in meaning than their root counterparts, they
remain more specific and concrete than most affixes. While they appear to be near the end of the grammaticization process formally, having already bonded with their hosts, they seem to be near the beginning functionally, with their concrete meanings.

A probable explanation for this discrepancy lies in the pathway of grammaticization by which they came into being. The constructions seen here show striking similarities to the NOUN-VERB and VERB-NOUN compounds known as noun incorporation.

By far the most commonly incorporated nouns cross-linguistically are terms for body parts. A quick perusal of the noun-like suffixes in Bella Coola (18) shows that the bulk of the inventories are body part terms. The same is true of Nootka. Incorporated nouns do not serve as grammatical arguments of the clause, but simply modify the verb in some unspecified way, often as a patient, but sometimes as an instrument or location. The same pattern can be seen among the lexical suffixes. The Bella Coola predicate ‘hurt’ in (30) is intransitive. Its only core argument is its first person singular subject ‘I’. The nose, invoked by the lexical suffix -lxs, is not represented in the pronominal suffix.

(30) kma-lxs-c
    be.in.pain-nose-I
    ‘I nose-hurt’ = ‘my nose hurts’

The predicate ‘cut’ in (31) is transitive, but the throat, represented by a lexical suffix -apsm, is not an argument. The subject is the cutter (‘he’), and the object is the victim of the throat-cutting (‘him’): ‘He would throat-cut him’ (Dan Nelson in DS 1980:225).

(31) ... s-ka-tx-apsm-lx-is.
    NOM-IRREALIS-cut-neck-INCHOATIVE-he/him
    ‘He [was about to go and] cut his throat.’

Incorporated nouns show reduced categoriality, usually bearing none of the trappings of nouns such as markers of number, case, or definiteness. The lexical suffixes show the same pattern, never carrying such distinctions.

Echoes of the special status of body part terms also appear in the languages with verb-like affixes. Among the verb-like affixes of Yup’ik, Nisga’a, and Bella Coola are forms that are attached only to nouns for body parts, such as the Yup’ik -cararte- ‘hit or get hit in ...’, -ngirarte- ‘injure ...’,
-lige- ‘be afflicted in one’s’, or -ir- ‘have cold ...’, the Nisga’a si-p- ‘have a ... ache’, and the Nootka -čap ‘be sore in...’ (Jacobson 1984).

(32) it’gaq ‘foot’ it’gaca’artaa ‘he hit it right in the foot’
iruq ‘leg’ iruirtuq ‘his leg is broken’
iglaq ‘esophagus’ iglairtuq ‘he scorched his throat’
qamiquq ‘head’ qamiququq ‘I have a headache’
cian ‘ear’ ciuituirtuq ‘my ears are cold’

Like incorporating verbs, these suffixes may be used to derive intransitive verbs (ciuituirtuq ‘my ears are cold’) or transitives (it’gaca’artaa ‘he hit it right in the foot’). As in incorporation, the body parts are not the core arguments of the derived verb, as can be seen from the pronominal suffixes. The only argument of the intransitive ciuituirtuq ‘my ears are cold’ is the first person singular -c ‘I’: ‘I am ear-cold’. The core arguments of it’gaca’artaa ‘he hit it in the foot’ are the hunter and the prey, not the foot: ‘He foot-hit it’. Backgrounding of body parts by incorporation or suffixation allows affected people and animals to be cast as core arguments, rather than their parts.

In many incorporating languages, verbs containing incorporated nouns cooccur with independent nominals in the same sentence. The incorporated noun may narrow the meaning of the verb so that it describes an action appropriate to a certain kind of object. The independent nominal then identifies the object. In Mohawk, for example, an Iroquoian language, the verb stem for ‘drink’ is -hnek-ihr- ‘liquid-consume’. The complex verb may cooccur with an independent noun phrase naming the liquid: onon-ta’ wa’khnek同ra’ ‘milk I-liquid-consumed’ = ‘I drank milk’. Such incorporation has sometimes been termed ‘classificatory’, since the incorporated noun (‘liquid’) is more general in meaning than the independent nominal (‘milk’). The lexical suffixes of Bella Coola appear in similar constructions. In (33) below, from a story by Agnes Edgar (DS 1980:132), the suffix -uc, literally ‘mouth’, is used in the extended sense of ‘pertaining to the mouth’ for ‘food’. The independent nominal identifies a specific kind of food, strips of spring salmon skin (‘the food-scorched spring salmon skin strips’).

(33) s-ti-kw
    ta-s-dis-uc-im-tx
    nom-split-quot    prox-nom-scorch-food-passive-article
    ‘What he cooked was strips of spring salmon skin.’

Similar constructions can be seen with verb-like affixes.
Noun incorporation serves the same kinds of lexical and discourse purposes as the lexical suffixes. It serves to create lexical items for new concepts and, in many languages, it is used to background established, predictable, or incidental information in discourse.

The resemblances between incorporation and constructions involving lexical affixes are striking. They are easily explained if the first is the diachronic source of the second. In fact this scenario has been proposed for the verb-like prefixes of Nisg̱a̱ (Tarpent 1987) and the noun-like suffixes of Salish (Egesdal 1981, Mattina 1987, Carlson 1990).

Tarpent reports that in Nisg̱a̱, “compounding is an extremely common and productive process” (1987:783). Noun-verb compounds include such stems as ḷʼeawa-lākw̓ “saw-wood”, “to saw wood”. Tarpent notes similarities in form between some of the verb-like prefixes in the language and existing verb roots, concluding that “many of [the prefixes] are probably former compounding elements” (1987:572).

<table>
<thead>
<tr>
<th>Prefixes</th>
<th>Related roots</th>
</tr>
</thead>
<tbody>
<tr>
<td>ḷ̓s-</td>
<td>ṣ̓skw̓ ‘to stink’</td>
</tr>
<tr>
<td>ḷ̓w̓a-</td>
<td>ḷ̓uwa-s ‘give someone a loan’</td>
</tr>
<tr>
<td>ṣ̓p-</td>
<td>ṣ̓ipkw̓ ‘hurt, ache, be sick’</td>
</tr>
</tbody>
</table>

Some of the Yup’ik suffixes with verb-like meaning also show interesting similarities to existing verb roots in the language. The suffix -tur-, translated variously as ‘eat’, ‘wear’, ‘use’, ‘have’, looks very much like an eroded form of the root atur- ‘use’, which also translated ‘wear’ or ‘sing’. The suffix -carte- ‘hit in the (body part)’ resembles the root gacarte- ‘hit or slap with the hand’. The suffix -ngirte- ‘injure, be injured in the (body part)’ appears to be a reduced form of the root akngirte- ‘to hurt, get hurt’. The similarities could of course be due to another kind of development. The roots could have originated as derived forms consisting of a root *a- or *ak- (or something longer) followed by the suffix -tur- or -ngirte-. No obvious candidate for such a root is easily identifiable within Yup’ik, however, or even Proto-Eskimo, as reconstructed by Fortescue, Jacobson, and Kaplan (1994). The Yup’ik roots are all listed as monomorphic in Jacobson’s 1984 Yup’ik dictionary, and two of the three have been traced back to monomorphic roots in Proto-Eskimo:
*atur* - ‘use, wear, sing’, and *qacar* - ‘slap, clap’ (Fortescue et al 1994). (*te* is an identifiable segmentable valency suffix reconstructible for Proto-Eskimo-Aleut and persisting in modern Yup’ik.) Fortescue et al (1994:419, 273) link another verb-like suffix -u* - ‘be’, present in all of the modern Eskimoan languages, to an Aleut root with the same meaning, which appears in the Attuan dialect as u*.

If the Yup’ik suffixes do represent grammaticized forms of roots, as seems likely, the grammaticization must have taken place early, before the breakup of Proto-Eskimo-Aleut. All of the Eskimo-Aleut languages contain large sets of verb-like suffixes, many of which can be reconstructed for the parent as suffixes.

Several Salishanists, in particular Egesdal 1981, Mattina 1987, and Carlson 1990, have proposed that the lexical affix constructions of Salish languages have also evolved from compounds. The noun-like suffixes are traced to the right members of compounds and the verb-like prefixes to the left members. As Egesdal points out, the noun-like suffixes appear to the right of the stem, in the same position as incorporated nouns in predicate-initial languages. Many of the modern Salishan languages still show such verb-noun compounding in addition to the lexical suffixes, though its productivity varies across the family (Dale Kinkade p.c. 1995). Carlson reports that in Spokane, for example, speakers “today can readily generate new compounds, suggesting that it was a productive process when the language was viable” (1991:41). The distribution of compounding across all branches of the family, and its varying productivity, are consistent with its presence in the parent language. The lexical suffixes are now distinct from incorporated nouns, however, as has been pointed out by a number of scholars, from Sapir (1911:251-4) through Newman (1968), Hagège (1978), Egesdal (1981), Mattina (1987), Carlson (1991), and others. The suffixes are not generally cognate with their stem counterparts, as they would be if they were incorporated nouns.

Some of the suffixes or portions of them are sometimes discernible within related stems. In most cases this is because the stems have been built up from roots plus the lexical suffixes, as in *yak-u* ‘ball’, containing the suffix -u* ‘round’. Sometimes the root is identifiable. Particularly common are the roots *as* - ‘area around’ and *ku* - ‘object’. Stems are sometimes preceded by a nominalizing prefix or third person possessive s* ‘its’.
(36) Stem Suffix

2asan -an ‘temple’
?asan -ank ‘front of body’
?astilc -lič ‘side’
?así -if ‘genitalia’
kululmx -ulmx ‘earth, ground, floor’
ku?alxi -ale ‘back of head, neck’
sku?ank -ank ‘side of body’
sku?halus -alus ‘joint’

A number of other stem-suffix counterparts suggest a process of grammatization, with the stem and the suffix both descendants of the same earlier stem. The suffix -uc appears to be an eroded version of the ancestor of cuca ‘mouth’; the suffix -us a reduced form of the stem musa ‘face’; the suffix -i xw a reduced form of the stem inxw ‘head’; and the suffix -bxs a reduced form of the stem ma ñsa ‘nose’.

An intriguing number of the lexical suffixes in Bella Coola and in Salish in general begin with a lateral or the sequence -al.

(37) -alic ‘tooth’ -ali-c ‘tongue’
-alxi ‘back of head, neck’ -ah ‘throat’
-almx ‘breast, teat’ -als ‘surface’

As Nater (1980) points out, -al- is a connective in modern Bella Coola that links members of compounds. Kinkade (p.c.) notes that this sequence serves as a linker in compounds throughout the family. The presence of the connective segments at the beginning of so many of the lexical suffixes further supports their origin in members of compounds. It also makes the relation between some suffixes and stems clearer, such as the suffix -al-ic ‘tooth’ and the stem ?ica.

The evolution of compounding constructions into suffix constructions must have taken place before the breakup of Proto-Salish. Newman (1968) reconstructs a system of lexical suffixes for Proto-Salish, and all of the daughter languages contain some suffixes of this type. Not all of the modern lexical suffixes have descended directly from Pre-Salish suffixes, though most probably have. New suffixes have apparently been added since the system was established. Haeberlin (1920-2:226) pointed out the correspondence between an Interior suffix for ‘domestic animal’ and a Coast stem. Dale Kinkade (p.c.) reports that Columbian, for example, an Interior language, contains the suffix
-sqaxa?, as in swip-sqaxa? ‘White man’s horse’ (suyápi ‘White man’). Upper Chehalis, a Coast language, contains an apparent cognate in an independent stem, the word qáxa? ‘dog’. The initial s of the Columbian suffix appears to be the third person possessive.

The same VERB-NOUN compound constructions that served as the source of the noun-like Salish lexical suffixes apparently served as the source for the verb-like lexical prefixes. Some similarities can still be seen between modern prefixes and stems, though not always in the same language. The Bella Coola prefix tix- ‘catch’, for example, corresponds to the full Spokane root tix‘- ‘get, obtain’. Unlike the Bella Coola prefix, the Spokane root forms the basis of words on its own, without another root or root-like element: tix‘-t-m-n ‘I’ll get it for you’ (Carlson & Flett 1989:93).

5. **A second source of derivational affixes: affix compounding**

The same polysynthetic languages that provide evidence of compounding as an alternative source of affixes show a second source as well. Both Yup’ik and Bella Coola contain extensive sets of relatively new suffixes that are transparently descended from compounds of frequently associated suffixes.

5.1 **Yup’ik compound suffixes**

It might seem at first strange that many Yup’ik and Bella Coola suffixes are longer than roots. They are the products of a second formal pathway of grammaticization of affixes: the compounding of recurring sets of suffixes. Sequences of suffixes that cooccur particularly often come to be analyzed as units. In some cases, the component suffixes are no longer productive on their own. Furthermore, the new compound suffixes may develop senses that are not obvious from the sum of their parts.

Yup’ik, like other Eskimoan languages, has developed a large inventory of compound suffixes. Many are adjectival or adverbial, many are aspectual, and many are among the kinds of verb-like suffixes we have seen here. A rich collection can be found in Jacobson’s 1984 dictionary. One such suffix is -rpagninarqe- ‘to smell strongly of’. Added to the root uqur- ‘seal oil’, it forms the verb stem of uqurpagninarquq ‘it smells strongly of seal oil’. The suffix -rpagninarqe- is compounded of two suffixes, -pag- ‘intensely’ and -ninarqe- ‘to smell or taste of’. The first can be added to the root tengl- ‘to punch’, for example, to yield the verb tenglugpaga ‘he punched him hard’. The second can be added to arinar- ‘rotten thing’ to yield the verb arinarninarquq ‘it smells rotten’.
Other compound suffixes include -ciar(ar)- ‘to wait patiently for’ from -cir- ‘wait for’ plus -ar(ar)- ‘a little at a time, leisurely’; -allige- ‘to suffer the lack of being...’ from -ate- ‘lack the quality of’ plus -lige- ‘be afflicted by’; -cetaar-‘to try to cause one to’ from -car- ‘cause, try to induce’ plus -aar- ‘repeatedly’; -illige- ‘to suffer from the lack of’ from -ite- ‘lack’ plus -lige- ‘be afflicted by one’s’, and many more. Compound suffixes may in turn combine with other suffixes in new compounds. Not surprisingly, the components of the compound suffixes vary in their transparency for speakers.

5.2 Bella Coola compound suffixes

Salishan languages also show suffix compounding. The Bella Coola suffix -ucak ‘cuff of a sleeve’, for example, appears in formations such as stq-ucak ‘sew on a new cuff’. It is composed of the suffixes -uc ‘mouth, orifice’ and -ak ‘hand’. The suffix -uiliq ‘hat’ appears in such words as pik-uiliq ‘oilskin hat’ (with root pik- ‘shiny’) and ks-uil-iq ‘take off one’s hat’ (ks- ‘remove’). The suffix itself is composed of -ul ‘body, container’ and -i-q ‘head’. (The final -i of the verb is a middle voice suffix.) As in Yup’ik, the components of the compounds may themselves be compound. The suffix -nalisxasat ‘between the toes’ is composed of -nal ‘joint’ plus -xas ‘nose’ = ‘tip’ plus at ‘foot’: at-tmp-nalus-lxs-at-m-ic STATIVE-insert-joint-tip-foot-MIDDLE-Vit ‘I have it between my toes’.

6. Conclusion

The well-known pathway of grammaticization, by which independent lexical items evolve first into grammatical words and then to clitics and affixes, is not the only source of affixes in language. Two alternative diachronic pathways have been described here.

Languages of the Eskimo-Aleut, Tsimshianic, Salishan, Wakashan, Chemakuan, and Sahaptian families contain large inventories of suffixes with the concrete translations more typical of verbs and nouns than of grammatical markers. Several kinds of evidence indicate that these affixes came into being via compounding. Such a pathway easily accounts for their concrete meanings and large inventories. At the moment of bonding (compounding), they were still roots, with the concrete, specific senses typical of roots. The compounding process would have had as possible input the full inventory of roots in the language, rather than a small paradigm of grammatical words such as prepositions or modal auxiliaries. The modern constructions have now evolved beyond the status of compounds however. The morphemes involved are no
longer from the class of roots, but rather constitute a relatively closed set of bound affixes that cannot occur alone. Nevertheless, the set of affixes is large, and their meanings relatively concrete. The constructions remain productive, in the case of some affixes very highly productive, as new stem-affix combinations are created for new concepts. In some cases, new affixes may even be brought into the system, like the Salishan 'domestic animal'.

The polysynthesis resulting from such productive compounding has also led to the creation of affixes by a different route. Sequences of affixes that routinely appeared adjacent to each other often have come to be interpreted as single suffixes, distinct from the sum of their parts. In many cases they have begun to develop semantically independently of their components. Such affixal compounding, a kind of reanalysis, is probably the greatest source of new suffixes in the Eskimoan and Salishan languages.

Such processes are not limited to languages of the Northwest Coast. The ancestor of English -ly in manly (manlike), for example, was joined with its host by compounding at a time when it was still a root. In the end, both of these sources of new affixes, root-compounding and affix-compounding, which can seem initially somewhat exotic when first identified in lesser-known languages, are not so exotic after all, and undoubtedly underlie numerous affixes in better-known Indo-European languages.

Notes

1 The Yup'ik examples are presented here in the practical orthography developed at the Alaska Native Language Center at the University of Alaska in Fairbanks. It includes plain stops p, t, k, q, and c, an alveolar-palatal affricate that patterns with the stops; voiced fricatives v, l, s=[z], y, g=[γ], r=[x], ur=[x*]; voiceless fricatives v=[f], s=[s], l=[l], gg=[x], w=[x*], r=[x]; and nasals m, n, ng=[ŋ]. Vowels are i, a, u, and e=[o]. The apostrophe ' is used for several purposes, the most common to indicate gemination: Yup'ik = [yup 'ik].

2 The two major sources on Bella Coola, work by Philip Davis & Ross Saunders and work by H.F. Nater, use two different orthographies. That used by Davis & Saunders is based on the IPA, while that used by Nater was designed as a practical spelling system. To facilitate comparison for the reader, material from Nater has been converted to the Davis-Saunders IPA-based system. The Nater/Davis-Saunders equivalences are ts/c, tl/z, ɬ/x, cw/ʃw, x/s, xw/w. Vowel length is marked with a raised dot .

References


