Actualization
Linguistic Change in Progress

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Offprint
ACTUALIZATION PATTERNS IN GRAMMATICALIZATION:
FROM CLAUSE TO LOCATIVE MORPHOLOGY
IN NORTHERN IROQUOIAN

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0. Introduction
In their 1968 article on language change, Weinreich, Labov, and Herzog drew attention to what they termed the embedding problem: the identification of factors that could account for the gradual spread of changes through a language and across communities. Since that time a number of works have traced the progress of particular changes over grammars and populations. Among these is a seminal study by Timberlake (1977) detailing the step-by-step spread of the genitive case through Finnish participial clauses, and of the accusative case through Russian negative clauses. Another study by Andersen (1987) documents the gradual development of auxiliaries into person and number markers on Polish verbs. Both authors point to the orderly actualization of the changes through contexts that can be described in terms of specific semantic and grammatical features, noting a progression from unmarked to increasingly marked contexts. In their large-scale study of syntactic change, Harris and Campbell propose that grammatical changes progress systematically to ever wider contexts definable in terms of natural classes (1995:101). A number of studies, however, have shown that change can proceed one lexical item at a time. Wang (1966, 1977) and Labov (1981) document the word-by-word spread of certain sound shifts. Ard (1975), Warner (1982), and Disterheft (1984) describe the step-by-step spread of complement constructions into clauses dominated by different matrix verbs. Warner (1983, 1990), Lightfoot (1979, chapter 2; 1991, chapter 6; 1999:180–185), Plank (1984), Hopper and Traugott (1993:45–48), and others discuss the development of certain English verbs into modal auxiliaries, lexical item by lexical item. Lichtenberk (1991) traces the evolution of certain Tobaba'ita verbs into prepositions and then conjunctions and complementizers, demonstrating that the items involved show different stages of
development. These works and others raise questions concerning the kinds of
generalizations that can be made about actualization patterns. Here it will be
shown that lexical factors need not necessarily constitute evidence against
systematicity. They can in fact contribute to the motivation of grammatical
change in principled ways.

A kind of change that offers opportunities for observing actualization
patterns is grammaticalization, by which lexical items evolve into grammatical
markers. Grammaticalization is typically gradual and leaves evidence within the
language of earlier diachronic stages. The actualization patterns to be examined
here involve the grammaticalization of a new locative category. The modern
Northern Iroquoian languages of northeastern North America contain paradigms
of locative suffixes that are pervasive in speech. Examples of locative
constructions can be seen in the sentences in (1) from Mohawk, spoken in
Quebec, Ontario, and New York State.¹

(1) Mohawk locatives; Sha’tekenhatie’ Phillips, Konwatiense Jacobs,
Warisose Kaiertithon, speakers.

a.  Kèn’en kaniatar-ákta entewaía’táta’.  
here lake-near we will body-put it in
“We’ll bury it here near the lake”

¹Examples are presented in the practical orthography adopted in all six Mohawk communities.
The practical orthography is essentially phonemic. Symbols ə, and ɛ represent plain stops
(voiced before voiced segments); ts is an alveolar affricate in Kahnawake, Kanehsatake, and
Wahta, which corresponds to an alveopalatal affricate spelled tsi in Ahkwesahsne,
Thaientaneken, and Ohsweken; s is a voiceless spirant; n, r, w, i are resonants, with i
representing the glide [y] before vowels; h is always pronounced as a distinct segment and the
apostrophe ’ represents glottal stop. The vowel symbols i, e, a, o have IPA values. Digraphs
on and on represent nasalized vowels: en is a nasalized low, central vowel [ʌ] and on is a
nasalized high, back vowel [ŋ]. The colon : represents vowel length, the acute accent ‘ marks
stress with high or rising tone, and the grave accent ‘, stress with falling tone.

In the glosses, the following abbreviations of grammatical terms are used: AGT
(grammatical agent), AND (andative), AUG (augmentative), CISLOC (cislocative), COINCID
(coincident), CONTR (contrastive), DIM (diminutive), DISTR (distributive), DUPL (duplative),
EPENTH (epenthetic vowel), EXCL (exclusive), FACT (factual), IMPF (imperfective aspect), INDEF
(indefinite gender), INCH (inchoative), INSTR (instrumental), MASC (masculine), NEUT (neuter),
OPT (optative), PAT (grammatical patient), PF (perfective aspect), PL (plural number), PROGR
(progressive), recip (reciprocal), REPET (repetitive), SG (singular number), STAT (stative), SUFF
(suffix), TRANSLOC (translocative).

I am grateful to the Mohawk speakers from the communities of Kahnawake, Kanehsatake,
Ahkwesahsne, Thaientaneken, Wahta, and Ohsweken, who have generously shared their
expertise. I especially appreciate the many insightful comments provided by Kanerahenthawi
Nicholas and Skawennati Montour of Kanehsatake, Kain’titahkwe Jacobs of Kahnawake, and
Rokwaho Dan Thompson of Ahkwesahsne.
b. Karhâ:-kon iahohika'we'  
woods-in he would leave him there  
"He would leave him in the woods."

field-at we grew up  
"We grew up in the country."

The other Northern Iroquoian languages show similar patterns.

The locative constructions have evolved from clauses, but the evolution is not complete. Varying stages of development can be seen with different lexical items and in different lexical contexts, allowing us to infer pathways along which the innovation has been spreading through the grammar.

1. Stimulus to reanalysis: structural ambiguity

Three lexical categories can be identified in Iroquoian languages on the basis of morphological structure: verbs, nouns, and particles.

Verbs consist minimally of a pronominal prefix, verb stem, and aspect suffix; cf. (2).

(2) Morphological verbs; Sha'tekenhatie' Marion Phillips, Lazarus Jacob, speakers.

a. k-atkêtskwa-s  c. ronwâ-río  
1.SG.AGT-get.up-IMPF  INDEF.PL.AGT/MASC.SG.PAT-kill.STAT  
"I get up"  "they have killed him"

b. wak-i:ta'-s  
1.SG.PAT-sleep-IMPF  
"I sleep"

Basic nouns consist of a prefix, noun stem, and suffix. The prefix indicates the gender of the referent or its possessor, and the suffix simply identifies the word as a noun; cf. (3).

(3) Morphological nouns.

a. ka-nâkt-a'  
NEUT.1-bed-NOUN.SUFF  
"bed"
b. o-tshá:t-a’
   NEUT.II-cloud-NOUN.SUFF “cloud”

c. rao-nákt-a’
   MASC.POSSESSOR-bed-NOUN.SUFF “his bed”

Particles are by definition morphologically unanalysable; cf. (4)

(4) Morphological particles.
   a. ó:nen
      “now”
   b. tsi
      “how, where, that, so”
   c. wísk
      “five”

The pronominal prefixes on verbs specify the core arguments of the clause. They show grammatical case distinctions originally based on semantic factors. Participants who actively and voluntarily instigate actions such as getting up or jumping, or states such as residing somewhere, are represented by grammatical agent prefixes (Paradigm I). Those who are not in control but are significantly affected by situations such as sleeping, falling, or being ill are represented by grammatical patient prefixes (Paradigm II). A third paradigm of pronominal prefixes represents agent/patient combinations in transitive verbs such as “kill” or “touch”. Verbs denoting inherent states such as “be big” or “be good” appear with Paradigm I prefixes, while those denoting resultant states like “be wet” or “have eaten” appear with Paradigm II prefixes; cf. (5).

(5) Pronominal prefixes with stative verbs.
   a. ka-kowá:n-en
      NEUT.I-be.big-STAT “it is big”
   b. ño-nda:naw-en
      NEUT.II-be.wet-STAT “it is wet”
   c. ró:-k-on
      MASC.II-eat-STAT “he has eaten”

Despite the semantic basis of the pronominal categories, the choice of prefix paradigm is categorical and lexicalized with each verb stem. Speakers cannot switch from agent forms (Paradigm I) to patient forms (Paradigm II), or vice-versa, for semantic effect. With some verb stems, semantic change over time has
obscured the original basis for a particular prefix choice, but the semantic foundations underlying the system as a whole are easy to discern.

The prefixes on nouns show some formal resemblance to those on verbs, but the resemblance is not exact, as can be seen by comparing the verbal and nominal neuter singular prefixes in Table 1; for the symbols, see footnote 1.

<table>
<thead>
<tr>
<th>Verbs</th>
<th>Nouns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paradigm I</td>
<td></td>
</tr>
<tr>
<td>ka-</td>
<td>ka-</td>
</tr>
<tr>
<td>w-</td>
<td>Θ</td>
</tr>
<tr>
<td>i-</td>
<td>Θ</td>
</tr>
<tr>
<td>Paradigm II</td>
<td></td>
</tr>
<tr>
<td>io-</td>
<td>o-</td>
</tr>
<tr>
<td>iaw-</td>
<td>aw-</td>
</tr>
</tbody>
</table>

Table 1. Verbal and nominal prefixes: neuter singulars.

The verbal and nominal prefixes also differ in function. Both indicate gender, but only the pronominal prefixes on verbs distinguish grammatical relations. The gender prefixes on nouns are simply lexicalized as part of the noun word and are invariant across syntactic contexts. In (6), for example, the prefix o- (NEUT.II.) on ohkwa:ri “bear” remains unchanged though the noun functions syntactically as a grammatical agent in (6.a) and as a grammatical patient in (6.b).

(6) Invariant gender prefixes on nouns; Warisose Kaierithon, speaker.

a. Wa’-t-ha:-t-a’-ne’  ka:ken  o-hkwá:ri. FACT-DUPL-MASC.-I-stand-INC-PF this NEUT.II-bear “The bear stood up.”

b. S-a-konwa-ia’t-isák-h-a’  ne  o-hkwá:ri. REPET-FACT-3PL/3.NEUT-body-search-AND-PF the NEUT.II-bear “They went back to look for the (dead) bear.”

In addition to the pronominal prefix and aspect suffix, verbs may include a variety of other affixes, as well as an incorporated noun stem, like –ia’t- “body” in (6.b) above or no’is- “tooth” in (7) below.

(7) Noun incorporation; Konwatiense Jacobs, Skawennati Montour, speakers.

Wa-honwa-no’is-ot-á:ko’. FACT-MASC.PL/MAASC.SG-tooth-stand-VERSIVE-PF “They pulled his teeth out.”
The incorporated noun does not function as a syntactic argument: it simply qualifies the predication. As can be seen in (7), it is not represented within the pronominal prefix complex that specifies the core arguments. Incorporated nouns also do not affect the choice of pronominal paradigm. The verb -ri “be ripe, cooked”, for example, appears with Paradigm II prefixes whether or not it contains an incorporated noun, and whether the noun itself would appear with a Paradigm I or Paradigm II prefix; cf. (8).

(8) Pronoun paradigm selection: governed by the verb stem.

a. io:-ri
   NEUT.PAT(ii)-be.ripe.STAT
   “it is ripe, cooked”

b. io-hi-á-ri
   NEUT.PAT(ii)-fruit-EPENTH-be.ripe.STAT
   “the fruit is ripe”

   ká-hi “fruit”

The syntactic functions of the three word classes are for the most part as would be expected. Particles serve as demonstratives, adverbs, numbers, conjunctions, discourse markers, etc. Morphological nouns serve as arguments of clauses. Morphological verbs serve as predicates. But verbs can do more. Since they contain pronominal reference to their core arguments, they can constitute fully grammatical, independent clauses in themselves, as in examples (2), (5), (7), and (8) above. They can also function syntactically as nominals, providing descriptive labels for arguments without overt nominalizing morphology.

(9) Mohawk verbal nominals.

a. ka-wítso:-ht-ha’
   NEUT.1-be.cold-CAUSATIVE-IMPF
   “it chills” = “refrigerator”

b. w-aten-nhoh-a-niiont-dhkhw-a’
   NEUT.1-MIDDLE-door-EPENTH-hang-INSTR-IMPF
   “it door-hangs with it” = “hinge”

c. io-hsk-óhar-e’
   NEUT.II-bridge-hang-STAT
   “it is bridge-suspended” = “suspension bridge”
Many morphological verbs, like those in (9), have become conventionalized as lexical nominals. Speakers recognize them first as names of entities. Other verbs are used sometimes as predicates, sometimes as nominals, like kakowá:nen “it is big/the big one” in (5). Still others are used rarely if ever as nominals, like katkétskwas “I get up” in (2).

Among the verbs are some that describe spatial location, as in (10).

(10) Spatial verbs; Skawennati Montour, Awenhráthen Deer, speakers.

a. te-hi-até-kh-en
   DUPL-MASC.DU.-RECIPR-be.adjacent-STAT
   “they two are adjacent to each other” = “they are neighbors”

b. Iah ki 1:non tha’-te-iakw-ate-nonhs-áter-e’.
   not just far CONTR-DUPL-1.EXCL.PL-I-RECIPR-house-be.apart-STAT
   “Our houses were not far apart.”

Like other verbs, spatial verbs may become lexicalized as nominals, as in (11).

(11) Lexicalized spatial verb.

   te-ha-honht-a-né:k-en
   DUPL-MASC.I-ear-EPENTH-be.side.by.side-STAT
   “his cars are side by side” = “cottontail rabbit”

Some spatial verbs incorporate a noun indicating the object located, like –nonhs-“house” in (10.b) and ahonht- “ear” in (11) above.

Others incorporate a noun that provides a point of reference. Some of these have evolved away from full status as verb roots toward locative suffixes. In natural speech, they are seldom used as the main predicates of sentences. If the point of a sentence is to indicate location, a verb of position serves as the main predicate. The answer to “Where is my shirt?” is the sentence in (12).

(12) Predication of location.

   Ka-ronito’tsher-á:-kon    io-hrén::t-on.
   NEUT.I-closet-EPENTH-in   NEUT.II-hang-STAT
   “It’s hanging in the closet.”

Given the translations of the sentences in which they occur, it might at first appear that the original locative verbs have evolved into the functional equivalent
of locative adpositions “in the middle of”, “beyond”, “beside”, “under”, “in”, and “at” (as in Tobaba’ita) and ultimately into locative case markers.

(13) Locative case? Sha’tekenhatie’ Phillips, speaker.

\[
\text{Ka-nå:t-a-kon} \quad \text{kwi} \quad \text{ni-’terón:}-\text{tahkwé’}. \\
\text{NEUT-town-EPENTH-in} \quad \text{right} \quad \text{MASC.DU.AGT-reside-IMPF.PAST}
\]

“They used to live in the village, you know.”

The function of the locative markers is subtly different, however. In Iroquoian languages, the only arguments marked for grammatical role are the pronominal prefixes within verbs. Independent nominals within the sentence, whether they represent grammatical agents, patients, or obliques, carry no formal marker of their grammatical relation. The locative constructions are no exception. The locative verbs have evolved into locative nominalizers: they create nominals that are labels for places. Because of their meanings, such nominals function most often to locate the events or states predicated by the clause, but the locative markers are not relational. The sentence in (14) was the answer to a question “Do you know the Kanehsatake reserve?” The word kaná:ton does not mean “in the village”, but rather “the village place”.

(14) Locative nominalizer; Sha’tekenhatie’ Phillips, speaker.

\[
\text{Né: kì’k nì:’} \quad \text{ka-nå:t-a-kon} \quad \text{ni-t-ienté:r-i.} \\
\text{it.is just the-myself} \quad \text{NEUT.I-town-EPENTH-place.in} \quad \text{PART-1.SG.AGT-know-STAT}
\]

“I myself just know the village.”

Formal traces of the verbal origins of the locative constructions are still easy to see. They show internal structures reminiscent of those of incorporating verbs. As seen earlier, morphological verbs often serve as syntactic nominals without overt nominalizing morphology. If deverbal nominals are incorporated into other verbs, however, they must be formally nominalized. The terms karón:to “bureau, closet” and kà:sere “car” were both originally coined from verbs. When incorporated, they always carry a nominalizing suffix, -’tsher- for “bureau” and -’ht for “car”; cf. (15)–(16).

Locative constructions generally show the same restriction as incorporating verbs: associated nominals must be formal nouns, either noun roots or nominalized stems; cf. (17).
(15) Overt nominalization under noun incorporation: “bureau”

- a. ka-rón:to
  NEUT.1-tree-stand
  “bureau”

- b. wa’ke-ronto-tsher-a-hni:non
  FACT-1.SG.AGT-bureau-NOMINALIZER-EPENTH-buy.PF
  “I bought a bureau.”

(16) Overt nominalization under incorporation: “car”

- a. kà:-sere
  NEUT.1-drag
  “car”

- b. a-ho-’seré-hi-a
  OPT-3.MASC/3.MASC-vehicle-NOMINALIZER-EPENTH-lend-PF
  “He would lend him the car.”

(17) Locatives with nominalizers -tsher- and -ht-.

- a. karonto’tsheráktá
  “near the dresser”

- b. karonto’tsheró:kon
  “under the dresser”

- c. karonto’tsherá:kon
  “in the bureau/closet”

- d. karonto’tsherà:ke
  “on the dresser”

Verbs with incorporated nouns also show special phonology. If a verb root begins in a consonant, and the preceding incorporated noun stem ends in a consonant, then an epenthetic -a- is inserted between them, as can be seen in (15.b) and (16.b) above. The same epenthetic stem joiner -a- appears in locative constructions. In (17.c) it joins ronto’tsher- to -kon, and sereht- to -kon.

The stative aspect suffixes that appear on verbs show a variety of forms, among them -en-, -on, -e', -i, and zero. The locatives show similar endings: -(i)hen “between”, -ti “beyond”, akta “near, beside”, okon “underneath”, -kon “inside”, and -a’ke “in, at, on”. The locatives appear with other affixes specific to verbs as well, such as the distributive suffix -hson. In (18) this distributive can be seen with a prototypical verb, and in (19) with locatives.
(18) Distributive –hson on a verb.

Wa-honwati-hseré-hson.

FACT-3.PL/3.PL.-chase-DISTR.PF

“They chased them around, all over the place.”


   (NEUT.1)-shadow-EPENTH-place.in-DISTR DUPL-MASC-PAT-travel-
   STAT-PROGR-DISTR
   “He travels along in the shadows.”

b. O-wis-a’ké=hson  n-ia’-e-tákh-e’
   NEUT.2-ice-place-DISTR PART-TRANSLOC-INDEF.AGT-turn-IMPF- DISTR
   “She ran, slipping and sliding across the ice.”

The reanalysis of locative verbs as nominals has included a shift in referentiality. In verbs serving as predicates, only the pronominal prefixes are referential: ka-kowá:nen “it is big”. In these locative constructions, as in other nominals, the full word is referential: kaná:tokon “the village place”. The difference is mirrored in formal shifts in the shape and selection of the prefixes. As seen earlier in Table 1, many of the prefixes on nouns differ slightly in form from their counterparts on verbs. A number of the verbal prefixes, for example, contain initial glides that are absent from the nominal prefixes. Before a-stems, the NEUT.1 verbal prefix is w-, but the noun prefix is zero. Though the locative constructions originated as verbs, they now appear with the nominal prefixes.

(20) Neuter verb and noun prefix.

Verb                                      Noun
a. w-ákerá’-s                         a. aten’én:r-a’
   NEUT.1-stink-IMPF                   (NEUT.1)-fence-NOUN.SUFF
   “it stinks”                          “fence”

b. aten’énhr-áktia                  c. aten’énhr-áktia
   (NEUT.1)-fence-near                 (NEUT.1)-fence-near
   “near the fence”                    “near the fence”

Prefixes for other genders and persons show the same distribution: those on locative constructions match those used on nouns.
(21) Masculine plural rati- on verb; Seth Newhouse in Hewitt (1899: 256.3).

*Né ken’ i:ken rati-náker-e*  
*it.is here it.is MASC.PL.ACT-reside-STAT*  
né tsí rati-nonhs-ó:t-on  
the where MASC.PL.PAT-house-stand-DISTR.STAT  
“This is where they lived, the place where their houses were ....”

(22) Masculine plural raoti- on nominals; Konwatsi’tsaiënni Phillips, speaker.

a. *raoti-nákt-a’*  
*MASC.PL.bed-NOUN.SUFF*  
“their bed”

b. *Raoti-nónhs-kon ni-on-sa-ha-tákhe’.*  
*MASC.PL.house-in PART-PACT-REPET-MASC.ACT-run-PF*  
“He went running back into their house.”

The locative constructions also show a shift in the government of prefix paradigm. In verbs, the choice of pronominal prefix paradigm is governed by the verb root, whether or not there is an incorporated noun. In locative constructions, the choice is now generally governed by the noun, as can be seen by comparing the rows and columns in Table 2.

As derivational nominalizers the locatives function to create lexical items. Speakers do not generally assemble locative nominals anew as they speak, but rather retrieve them ready-made from their lexicons. As lexical items, they may be coined for special purposes or develop specialized meanings.

(23) Specialized meanings.

a. *o-honts-ó:kon*  
*NEUT.IN-earth-place.inside*  
“in the earth” = “cellar”

b. *aten’én:r-a-kon*  
*(NEUT.I)-fence-EPENT-place.inside*  
“inside the fence” = “yard”

c. *o-hson’kar-à:ke*  
*NEUT.IN-board-place*  
“on the boards” = “floor”
d. *o-thorè:ke*  
\[ \text{NEUT.II-be.cold-place} \]
“where it is cold” = “north”

Especially common among lexicalized locative constructions are placenames.

(24) Highly lexicalized nominals: placenames.

a. *S-ka-hnéht-a-ti* (source of the name of Schenectady)  
\[ \text{REPET-NEUT.I-pine-EPENTH-place.beyond} \]
“on the other side of the pines” = “Albany, New York”

b. *Ka-hnaw-à:ke*  
\[ \text{NEUT.I-rapids-place} \]
“at the rapids” = “Kahnawake, Quebec” (Mohawk community)

Like other derivational morphology, the locative suffixes are not syntactically obligatory. Though they appear in large numbers of placenames, many other placenames do not contain them, such as *Tekahson'kahró:rens* “Hogansburg” (“they split planks”, site of a sawmill), *Kanón:no* “New York City” and *Ken'taróhkwi* “Kingston”.

Since the locative constructions are derived nominals, they can undergo further derivational processes applicable only to nominals. The Northern Iroquoian languages contain sets of enclitics that are added only to lexicalized nominals, whatever their internal morphological structure. One is the augmentative =*kowa*, visible with a basic noun in (25.a) and with locative nominals in (25.b) and (25.c).

(25) Augmentative clitic on nominals.

a. *ka-honwei-a' =kó:wá*  
\[ \text{NEUT.I-boah-NOUN.SUFF=AUG} \]
“ship”

b. *Ka-rh-a-kon=hkó:wá*  
\[ \text{NEUT.I-tree-EPENTH-place.in=AUG MASC.PL-go-DISTR.IMPF} \]
“They were walking around in the great forest.”

c. *Ka-hent-a'ke=hkó:wá* *ni-t-konwati-ia't-énha.*  
\[ \text{NEUT.I-field-place=AUG} \]
\[ \text{PART-CISLOC-3.PL/3.PL-body-carry.PF} \]
“They got them from the big field.”
<table>
<thead>
<tr>
<th>Locative construction</th>
<th>Noun</th>
</tr>
</thead>
<tbody>
<tr>
<td>kanátakíta</td>
<td>kanást'a</td>
</tr>
<tr>
<td>karakhkwákt'a</td>
<td>karákhkwá'</td>
</tr>
<tr>
<td>kanaktákta</td>
<td>kanakt'a</td>
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<td>ahsirákt'a</td>
<td>áh'sírá'</td>
</tr>
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<td>áh'skó:wa'</td>
</tr>
<tr>
<td>otshátó:kon</td>
<td>otshát'a</td>
</tr>
<tr>
<td>okwiró:kon</td>
<td>ó:kwi're'</td>
</tr>
<tr>
<td>ohné:ka'</td>
<td>ohné:ka'</td>
</tr>
</tbody>
</table>

Table 2. Pronominal paradigm selection governed by noun.

Another nominal clitic is the residential =kronon', which derives names for inhabitants of places. Because of its meaning, it appears particularly often with locative nominals.
(26) Locative with residential clitic.

\[ ie\text{-}ronhi\text{-}a\text{'ke}=hró\text{':}non' \]

INDEF.AGT\text{-}sky\text{-}place=RESIDENTIAL

"resident of the sky place" = "angel"

A typical component of grammaticalization processes is an extension of meaning, often to more general or abstract uses. The Northern Iroquoian locative constructions exhibit the common extension from the domain of space to that of time.

(27) Extension to time.

a. \text{ent-}ákta

\text{day-beside}

"Saturday"

b. \text{ako-}hsérà:ke

\text{winter-NOMINALIZER-in}

"wintertime"

The languages thus show the development of a new grammatical category. Certain locative verb constructions containing incorporated nouns have been reanalysed as locative nominals, and as a result the original verb roots in those constructions have been reanalysed as locative nominalizers.

2. Actualization

The locative markers appear to constitute a paradigm. Yet individual locative morphemes show different degrees of grammaticalization. Some of the locatives appear to be closer to their verbal origins than others. The locative \(-t\iota\)

(28) Locative without associated noun; Warisose Kairithon, speaker.

\[ Ni\text{-}t\text{-}io\text{'}karà\text{':}on \quad \text{iako-}ló\text{'}t\text{-}e' \]

PART-CISLOC\text{-}NEUT.II\text{-}be.night-INCH-STAT \quad \text{INDEF.PAT-work-IMPF}

so is it night she works

\[ s\text{-}ká\text{'}-tì \quad \text{ne\ }\text{ion-}hsít\text{'}-t\text{-}a\text{':}ke \]

REPET\text{-}NEUT.I\text{-}on\text{other}\text{-side-STAT} \quad \text{the NDEF-foot-place}

it is on one side the where her foot is

one foot

\[ te\text{-}ion\text{-}tatkarén\text{':}r\text{-}on \quad o\text{-}wirà\text{':}a. \]

DUPL\text{-}INDEF.AGT\text{-}rock\text{-}STAT \quad \text{NEUT.I-child-NOUN.SUFF-DIM}

she is rocking it baby

"All night she worked rocking the cradle."
“beyond, on the other side” still occurs on its own as a predicate, without an associated noun. The word *ská:ti* in (28) has the form of a regular verb without incorporation.

Both –*ti* “beyond” and –*(i)hen  “in the middle of” still occur with affixes otherwise found only on verbs. The locative construction formed with –*ti* in the first line of (29) contains a partitive prefix and the verbal pronominal prefix *w*–.

(29) Locative –*ti* with verbal prefixes; Konwatsi’tsaienni Phillips, speaker.

```
fsì   nónhskwati  she's
fsì   na’w-ahskw-ati  she's
far  PART-NEUT.I-bridge-EFENT-place.beyond  customarily
way  on the other side of the bridge
nìió:re’  niekonnéhtha’  ne  tìonnhónhskwaron’
so.it.is.far  there.they.wandered  the  they.have.jowels
“The cows would pasture way on the other side of the bridge.”
```

The –*ti* construction in (30) contains a repetitive prefix, which also occurs otherwise only in verbs.

(30) Locative –*ti* with repetitive; Seth Newhouse, speaker (Hewitt 1899:270.1).

```
S-ka-nhóh-a-tì
REPFT-NEUT.I-door-EFENT-place.beyond
place on the other side of the door
i-on-sa-ki-at-áweia’t-e’
TRANSLOC-FACT-REPFT-MASC.DU.AGT-MIDDLE-enter-PF
there they two entered again
“They two went back into the other room.”
```

The –*(i)hen  locative construction in (31) also contains prefixes that are part of the regular verbal morphology, the coincident and the duplicative.

(31) Locative –*(i)hen  with verbal prefixes; Niioronhia’a Mae Montour.

```
sha’-te-ka-nekot-f-hen
COINCID-DUP-NEUT.I-ladder-place.in.the.middle.of
place between the two equal halves of the ladder
```
sh-á-h-e-’ ....
COINCID-FACT-MASC.1-go-PF

as he went

“When he was halfway up the ladder ....”

The locatives –akta “beside” and –kon “in” no longer occur as predicates in Mohawk, but cognates –akwt and –kəw have been recorded functioning as predicates in Tuscarora, the Northern Iroquoian language most distantly related to Mohawk. The first, recorded in this use by Rudes, was translated “be beside” or “be near”.

(32) Tuscarora –akwt “be beside” (Rudes 1999: 42).

na'-d-::k-t-akwt
PART-OPT-1-DU-be.beside.PF

“that the two of us be near one another”

The second, recorded a century ago by J.N.B. Hewitt, was translated “lie inside”.

(33) Tuscarora -kəw “lie inside” (Hewitt in Rudes & Crousse 1987:79)

we-hra-kəw-hə-h
TRANSLOC-MASC.AGT-loc.within-DISTR-IMPF

“he is lying there inside”

On the basis of the substantial textual material recorded by Hewitt at the end of the nineteenth century, we can see that even then the use of these morphemes as predicating verbs was rare.

Further advanced along the path from verb to nominalizer is the general locative –a'ke. In many contexts –a'ke “place of” behaves like the other locatives. It still shows traces of a verbal origin, requiring overt nominalizers on associated deverbal noun stems. But it also shows evidence of an evolution toward status as a simple noun ending: it never functions as a main predicate, always occurs with the prefixes appropriate for nouns, never governs the choice of prefix paradigm, and appears with nominal enclitics. Certain –a'ke constructions show an even further evolution.

While many noun stems in Iroquoian languages appear both in independent nouns and incorporated in verbs, some appear in only one context
or the other. The Mohawk roots akehr- and -ks- both mean “dish”; the first occurs in nouns but not verbs, while the second occurs in verbs but not nouns.

(34) Noun roots akehr- and -ks- “dish”.

a. akè:r-a
   (NEUT.1)-dish-NOUN.SUFF
   “dish(es)” (noun)

b. a-hshe-ks-a-hér-hahs-e'
   OPT-2.SG/3.PL-dish-EPENTH-set-BENEFACTIVE-PF
   “you should set down a dish for them” = “... serve them” (verb)

The distribution of the two stems in locative constructions is interesting. Most of the locative morphemes occur with the incorporeal root -ks-, like verbs. The locative -a’ke, however, occurs with the root akehr-, which usually forms the basis of nouns.

(35) Locative constructions.

<table>
<thead>
<tr>
<th>Grammatical</th>
<th>Ungrammatical</th>
</tr>
</thead>
<tbody>
<tr>
<td>kaksó:kon “under the dish”</td>
<td>(*akehró:kon)</td>
</tr>
<tr>
<td>káksakon “in the dish”</td>
<td>(*akè:rakon)</td>
</tr>
<tr>
<td>akehrà:ke “on the dish”</td>
<td>(*kaksà:ke)</td>
</tr>
</tbody>
</table>

The general locative -a’ke appears to be simply an ending added to nouns. (In stressed syllables, a coda glottal stop stimulates creaky voice over the preceding vowel, lowers the tone, then disappears: *akehrá’ke → akehrà:ke.) In fact some forms show that the general locative has been reanalysed from a single morpheme -a’ke to a sequence of noun suffix -a’ plus locative enclitic =ke. In earlier formations, the shape of the general locative is -a’ke no matter what the shape of the noun suffix in the corresponding independent noun, as in (36). In more recent formations, the noun suffix remains, and only =ke is attached; cf. (37).

(36) Original locative -a’ke regardless of the shape of the noun suffix.

kén-tsi-on
   NEUT.1-fish-NOUN.SUFF
   “fish”

ken-tsi-à:ke
   NEUT.1-fish-place
   “on the fish”
(37) More recent formations with =ke following noun suffix.

   a. ka-riht-ön'  
      NEUT.I-police-NOUN.SUFF  
      "policeman"

   b. Oston  
      Boston  
      "Boston" (loan)

As noted above, the locatives, like verbs, generally occur with formal noun stems, either noun roots or noun stems containing overt nominalizers.

(38) Locatives with nominalizers.

   a. o-nonhs-a-tokenht-i'-tšher-dkta  
      NEUT.II-house-EPENTH-be.holy-STAT-NOMINALIZER-place.beside  
      "next to the church"

   b. o-nonhs-a-tokenht-i'-tšher-ð:kon  
      NEUT.II-house-EPENTH-be.holy-STAT-NOMINALIZER-place.under  
      "under the church"

   c. o-nonhs-a-tokenht-i'-tšher-dį-ð:kon  
      NEUT.I-house-EPENTH-be.holy-STAT-NOMINALIZER-EPENTH-place.in  
      "inside the church"

   d. ka-hwehn-o'-tšher-dkta  
      NEUT.I-island-be.in.water-STAT-NOMINALIZER-beside  
      "near the island"

But the nominalizer is not always present before the general locative enclitic.

(39) General locative =ke without nominalizers.

   a. o-nonhs-a-tokenht-ı=ke  
      NEUT.II-house-EPENTH-be.holy-STAT=place  
      "at the church"

   b. ka-wehn-ð:ke  
      NEUT.I-island-be.in.water-STAT=place  
      "on the island"
c.  sh-io-rh-ón=ke
    COINCID-NEUT.II-dawn-STAT=place
    “time when it has dawned” = “this morning”

The locative appears to have simply been attached as an ending to these lexicalized nominals, even though they are morphological verbs.

The term for “Tuesday” is interesting in that it shows multiple layers of derivation, with an inner occurrence of the earlier locative –a’ke and an outer occurrence of the later locative =ke.

(40) Layers of locative derivation.

    rati-ronhi-a’ke=bronon=ke
    MASC.PL.1-sky-place=RESIDENTIAL=place
    “time of the residents of the heavens” = “day of angels” = “Tuesday”

The form =ke now alternates with an allomorph =hne under phonological conditioning: =ke occurs after glottal stop, and =hne occurs everywhere else. The diachronic origin of =hne can no longer be discerned, and it shows no traces of an earlier verbal origin. It may be added to any lexicalized nominal whatever its internal morphological structure, and it never requires a nominalizer.

(41) Locative =hne on deverbals without nominalizer.

a.  ate-khw-a-hrá=hnê
    (NEUT.I)-MIDDLE-food-EPENTH-set=place
    “on the table”

b.  ka-nonhs-ê=hne
    NEUT.I-house-be.long.STAT=place
    “at the longhouse”

c.  an-itskw-a-hrá=hne
    (NEUT.I)-MIDDLE-buttocks-EPENTH-set=place
    “on the chair”

d.  akai-ón=hne
    (NEUT.I)-be.old-STAT=place
    “secondhand store”
e. onhwentsi-a-kai-ôn: = ne
   (NEUT. II)-land-EPENTH-be.old-STAT=place
   “Europe”

f. Ken-tsi-á'=kowá=hne
   NEUT. I-fish-NOUN.SUFF=AUG=place
   “place of the big fish” = “Fort Covington, New York”

 g. onkwe= honwê=: ne
    (NEUT. I)-person=real-place
    “Indian land, reserve”

h. ronwa=ia'-t-a-mentak-ôn= ne
   3.pl./MASC.SG-body-EPENTH-stick-STAT=place
   “time of their having nailed him to the cross” = “Friday”

The nominal clitic = hne also never governs the choice of prefix paradigm. It is added even to nominals with no prefix at all, and no other noun morphology.

(42) Locative = hne on other nominals.

a. Warl= hne
   Mary=place
   “at Mary’s”

c. kweskwês= hne
   pig=place
   “pigpen”

b. Sosé= hne
   Joseph=place
   “Joseph’s time” = “Wednesday”

d. kitkit= hne
   chicken=place
   “chicken coop”

The locatives thus exhibit varying degrees of evolution from verb to nominalizing enclitic. In many instances -(i)hen “middle” and -i “place beyond” show more verbal features than -akta “place beside”, -okon “place under”, -kon “inside”, and -a‘ke “place”; and =kelhne “place” show few verbal features at all. But the actualization pattern is not just a straight path. Individual locative morphemes show different patterns of behavior in different lexical items.

As we have seen, it is now usually the noun that governs the choice of prefix paradigm in locative constructions. But in some constructions the choice is still governed by the locative morpheme. The nouns qon:ta‘ “hill” and ghsdón:kara‘ “board” appear with the Paradigm II prefix o- on their own, but locative constructions containing -i “beyond” and -ihen “middle” show the Paradigm I prefix ka-.
(43) Government of prefix by locative; Kanerahtenhawi Nicholas, speaker.

a. n-ia'-ka-nón:i-t-a-ti
   PART-TRANSLOC-NEUT.1-hill-EPENTH-place.beyond
   "the other side of the hill"

b. sha'-te-ka-hson'kar-i:hen
   COINCIDENT-DUPL.-NEUT.1-board-middle
   "the middle of the board"

The prefix-locative combinations seen here and earlier are regularly recurring, idiomatic constructions: the partitive plus locative –ti, the repetitive plus locative –ti, and the coincident plus duplicative plus locative –i:hen. All systematically appear with Paradigm I prefixes. Lexicalization is a significant factor in both the frame of these structures and in the inventory of locative constructions in the language. Not all combinations of locative markers and nominals exist. To say "in the middle of the rock", for example, a periphrastic construction is used.

(44) Periphrastic construction; Kanerahtenhawi Nicholas, speaker.

ahl'n:nên ne o-nén:i-a'
middle the NEUT.2-ROCK-NOUN.SUFF
"in the middle of the rock"

Similar idiosyncrasies appear with –akta "beside". In combination with the noun qon:n:ta’ "hill", it yields kanontákta "beside the hill" with prefix choice governed by the locative. With the noun qnén:i/a' "rock", the usual form is onenidkta "beside the rock", but kanenidkta is heard as well. As often happens when doublets are in competition, differences in patterns of usage can sometimes be discerned. With the noun q'neróhkwa' ‘box’", the usual form is ka'nerohkwákta "beside the box", but q'nerohkwákta is also heard. Speaker Kanerahtenhawi Nicholas observes that the first is used in contexts of immediacy and the second in contexts of greater remoteness. If I am carrying something heavy, she would use the command in (45) to ask me to set it down right next to the box immediately in front of her.

(45) Immediacy; Kanerahtenhawi Nicholas, speaker.

here NEUT.1-BOX-beside PROTHETIC-2.SG.AGT-set
"Set it down right here next to the box."
If on the other hand she found something last week, and I asked her where she had found it, she might respond as in (46).

(46) Greater remove; Kanerahtenhawi Nicholas, speaker.

\[Q-'\text{nerohkw-ákta} \quad \text{wake-tshénri-on.}\]
\[\text{NEUT.II-box-beside} \quad \text{1.SG.PAT-find-STAT}\]

"I found it next to the box."

The locatives \(-kon\) and \(-a'ke\) show the expected government of the prefix choice by this noun: \(q'neróhkwa'kon\) "in the box", \(q'nerohkwá:ke\) "on the box".

But \(-kon\) "in" shows variation of its own. The term for the muddy bottom of a river is \(onón:wa'\). To refer to the area in the muddy bottom, both \(kanón:wakon\) and \(qnón:wakon\) are used, with different prefix preferences for different speakers. Another noun, \(q'nónhkwa'\) "bottom, seat of pants", always appears with the Paradigm II prefix \(o-\) on its own, but the term for "area in the bottom", as in the bottom of a barrel, is always \(ka'nónhkwakon\).

Even \(-a'ke\) shows variation. The noun \(åtsèn:ra\) "rock" appears with the Paradigm II prefix \(o-\) on its own, but with the Paradigm I prefix when associated with the general locative: \(kentsenhrá:ke\) "on the rock". The model for this prefix choice appears to be another morphological verb commonly used to refer to rock: \(tkentsën:ro-te\) "there it rock stands".

(47) \(åtsèn:ra\) "rock"

\[\text{ken-tstenhr-á:ke} \quad \text{t-ken-istën:r-o-te'}\]
\[\text{NEUT.I-rock-place} \quad \text{CISLOC-NEUT.I-rock-stand-STAT}\]

"(place) on the rock" "standing rock" = "rock"

Because the locative nominalizers create lexical items, derived forms may remain in the language after the bases on which they were formed go out of use. The term \(onontóhará:ke\) "on top of the hill" occurs frequently, but the base, \(onontóhare'\), does not occur.

Individual lexical items also show varying degrees of phonological erosion, a typical concomitant of grammaticalization. The term for "in the house", a very frequent word, shows erosion not found in other words with parallel morphological structure. Its expected form would be \(kanónhsakon\), but the unstressed epenthetic vowel has been lost, reducing it to \(kanónhskon\). Erosion is also common in placenames, highly lexicalized constructions whose internal morphological structure can fade quickly with use. The name for "Montreal" is \(Tiohtia:ke\), with an ending typical of nominalized locatives, but the base of the
form is no longer entirely clear. Parts are suggestive, and speakers have various ideas about possible earlier forms, but it is clear that some of its substance has been lost.

3. Motivating forces

The verb-to-locative shift shows different degrees of development with different locative markers. It has apparently progressed the furthest with =ke/hne “place”, slightly less far with kon “inside”, -okon “underneath”, and -akta “near, beside”, and still less with (i)hen “middle”, -ti “beyond”, and several others. We can now ask whether the pattern of spread reflects any general principles.

In a number of ways the shift seems to have proceeded from the unmarked to the marked, in accord with hypotheses proposed by Timberlake (1977) and Andersen (1987, 2001:30–37). The most grammaticalized marker, =ke/=hne, is the most general in meaning: “place”. It is by far the most frequent locative in natural speech, perhaps more frequent than all other locatives combined. It is also the only locative to show significant allomorphy, a feature cited by Greenberg (1966) as characteristic of unmarked elements.

Another feature associated with markedness by Givón (1990:945–966) is degree of cognitive complexity. This feature too is pertinent to the change at hand. In a survey of locative constructions in twenty-six languages, Svorou (1994, 1999) found that “asymmetry in the degree of grammaticalization parallels the cognitive asymmetry observed with respect to the frontal axis, vertical axis, and in/on terms” (1999 handout). She cites work by Clark (1973) and Miller and Johnson-Laird (1976) demonstrating that vertical axis terms have greater cognitive salience, and thus greater conceptual simplicity, than frontal axis terms. She notes that the degree of cognitive salience or conceptual simplicity matches the order of acquisition of spatial terms by children in a number of languages, resulting in the order:

on > in > under > beside > back > front

The match between this pattern and the progression of grammaticalization of the Northern Iroquoian locative markers is remarkable.

In fact the motivation behind both the shift and its spread can be understood in terms of general cognitive and communicative factors. We know that grammaticalization typically begins with items that are relatively general in meaning. (Semantically general markers are by nature typically simplex cognitively.) The generality of meaning engenders high frequency of use, since such markers are applicable to large numbers of contexts. (Cognitive simplicity and especially frequency of use naturally lead to early acquisition by children.)
Human beings tend to routinize recurring operations, whether it be riding a bicycle or expressing ideas. The automation of frequently occurring expressions results in a loss of awareness of their internal structure. A verb like *karhda:kon* "it is in/among the trees", used repeatedly to identify a kind of place, would come to represent not a complex description but a single concept, the label for a forest. Such constructions appeared in the same syntactic contexts as morphological nouns, and began with a prefix identical to those found on nouns: *ka-*.

The semantic, syntactic, and morphological ambiguity set the scene for a reinterpretation of the original clausal description ("it is among the trees") as a nominal ("place among the trees" > "forest"). Morphemes recurring frequently at the ends of these nominals, like *kon* here, were reanalysed as nominalizers. The shift in analysis was accompanied by a shift in referentiality. In locative verbs, the only referential element was the pronominal prefix ("it is among the trees"), but after reanalysis, the entire word was used referentially ("forest"). New locative constructions began to appear with prefix shapes appropriate for nouns, even when these differed in shape from the prefixes used on verbs, and the prefixes on existing forms began to be remodelled to conform to their new status as nominals. As parallels with noun incorporation faded, new forms were derived by adding locative suffixes to existing independent nominals, without formally nominalizing them first or altering their prefixes.

An important aspect of the evolution is the fact that it shows different degrees of development with different markers and in different lexical items. Actualization that proceeds morpheme by morpheme and word by word would appear to confound attempts at description in terms of general features. We know that idioms often preserve relics of earlier forms and constructions, because they are lexicalized: speakers retrieve them as units from memory rather than creating them anew each time they speak. Words can constitute particularly tightly lexicalized units. In the Northern Iroquoian languages, the lexicalization of locative constructions has preserved earlier grammatical patterns, even after new, productive patterns have evolved for deriving additional forms.

But lexicalization can also facilitate change. The integrity of lexicalized locative constructions first set the stage for reanalysis by reducing the salience of their internal structure and components. The most strongly lexicalized expressions were those used the most often. These forms served as models according to which speakers derived new vocabulary. The process of grammaticalization was thus accelerated for those locative morphemes used the most often, such as the general *=ke/=hne* "place", and within the areas of the lexicon most often enriched by derivation, such as placenames.
Nichols and Timberlake describe grammar as a network with areas of varying degrees of rigidity.

The relatively fixed areas of a grammatical network are then exemplars with characteristic properties; exemplars are pieces, perhaps minimal units, of text. Because a grammar based on exemplars necessarily underspecifies usage, new tokens of text may arise by extrapolating from given exemplars. These new tokens of usage can be conventionalized as exemplars (grammaticalized, if you will), setting the stage for more innovations. (1991:130)

Lexicalization can be a powerful force in fixing areas of such a network, creating conventionalized exemplars, pieces of text which serve as models for further formations. Seen in this light, the morpheme-by-morpheme and word-by-word actualization of the grammaticalization of the locative construction turns out to be principled after all.

REFERENCES


