The Oneida Lexicon
Author(s): Karin Michelson
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THE ONEIDA LEXICON
Karin Michelson
SUNY Buffalo

1. INTRODUCTION. A basic issue in morphology is to what extent the morpheme or the word is the basic lexical unit. Related to this issue is the extent to which predictable and regular properties of words are expressed by lexical redundancy rules, which are explicit statements about relationships between words, or by word-formation rules, which derive words from morphemes. On the one hand, properties of words cannot always be predicted from the properties of morphemes, e.g., (1) non-compositional meaning; (2) irregular morphosyntactic or phonological behaviour; and (3) degrees of productivity exhibited by word-formation and morphophonological rules (e.g. Aronoff 1976, Bochner 1986, Bybee 1988, Jackendoff 1975). On the other hand, semantic, syntactic, and phonological phenomena sometimes can be transparently identified with constituents smaller than words, namely morphemes. A theory of morphology must be able to account for such generalizations as well. Also relevant for the language I will be discussing is a third type of morphological constituent, the stem, or the part of a word that remains when inflectional material is stripped away.

This paper addresses the status of stem, word, and morpheme in Oneida, an Iroquoian language I have worked on since 1979. The focus of the paper will be a discussion of several constructions, inflectional as well as derivational, with respect to semantic compositionality, morphosyntactic or phonological regularity and irregularity, and productivity. One result of this survey is that internally-complex forms reflect degrees of lexicalization, by which I mean a continuum of awareness on the part of speakers of the existence of internal structure. This idea is very loosely based on a redefinition of psychological reality by Wilbur and Menn (1975).

I wish to express my debt to Michael Foster and Hanni Woodbury. This paper owes much to our collaborative work on the goals and organization of Iroquoian dictionaries. Our efforts have been directed towards developing a "base" dictionary, in which constituents larger than morphemes are given as heads of main entries. The Oneida data in this paper are from Mercy Doxtator and Norma Sickles, to whom I extend my thanks.

2. STEMS. Perhaps the least controversial morphological constituent in Oneida is the stem. In the verbs given in (1) through (4) the stems are composed of a verb
root with an incorporated noun. All four examples are semantically non-compositional. However, consultants freely provided literal glosses for (1) and (2). When questioned, they identified a semantic element ‘eye’ in (3), but did not offer any analysis of (4). (v represents a mid central nasalized vowel, _ represents a glottal stop.)

(1) tehehnakwalaténi’
  te-ho-HNAKWAL-a-TÉNI-’
  dualic-masc.sg.patient-RUBBER-epen-CHANGE-stative

(2) vtkatwnatane’
  v-t-k-at-WVN-á-TA-ne’
  future.mode-cislocative-1sg.agent-semi.reflexive-VOICE-epen-PUT.IN-punctual

(3) wa’thokahlayv·táne’
  wa’-t-ho-KAHΛ-a-YV·TA-ne’
  factual.mode-dualic-masc.sg.patient-EYE-epen-RECEIVE-punctual

(4) teklihwákhwa’
  te-k-LIHW-á-KHW-a’
  dualic-1sg.agent-MATTER-epen-LIFT.UP-habitual

In many cases, stems contain elements other than verb roots and incorporated noun roots. For example, verbs may require a PREpronominal prefix, in which case the stem is realized discontinuously. The cislocative prepronominal t-, is required of the verb root in (5) -atahsaw- while the dualic te- is required of the root -yv- in (6) and (7) in the meaning ‘gamble’. The dualic is also obligatory in (1) and (4).

(5) takatáhsgwv’
  T-a-k-ATÁHSAW-v’
  CISLOCATIVE-factual.mode-1sg.agent-BEGIN-punctual

(6) tekhyatùhslayvhe’
  TE-k-hyatú-hsl-a-YV-he’
  DUALIC-1sg.agent-write-nominalizer-epen-PUT-habitual

(7) tékvyhe’
  TÉ-k-YV-he’
  DUALIC-1sg.agent-PUT-habitual

cf.  ikyvs
  i-k-YV-s
  epen-1sg.agent-PUT-habitual

I put.
Phenomena that indicate that speakers treat some stems as non-derived units are the following. First, stems may undergo phonological fusion. In (8) and (9), for example, the epenthetic joiner vowel a, which regularly intervenes between a consonant-final noun root and a following consonant-initial verb root, is lacking, and the final l of the noun root has been lost. Fusion is a sporadic phenomenon; so (3), which also contains -kahl-, does not show fusion.¹

(8) wa’tkatkahkweke’  I closed my eyes.
   *wa’-t-k-at-KAHL-a-KWEK-e’
   factual.mode-dualic-1sg.agent-semi.reflexive-EYE-
   epen-SHUT-punctual

(9) tekkahkwekú  I’m blind.
   *te-k-KAHL-a-KWEK-ú
   dualic-1sg.agent-EYE-epen-SHUT-stative

Second, speakers sometimes misanalyze constituents when consulted about the literal meaning of a stem. A good example of this is from Mohawk, a language closely related to Oneida. The form in (10) means ‘Stay up there!’ An excellent Mohawk speaker analyzed this as being composed of a noun root -rat- 'heel' incorporated by the verb root -k- 'eat', i.e. 'Eat your heel!'²

(10) taserá·ta’k  Stay up there!
    t-a-se-rá·ta’-k
    cislocative-factual-2sg.agent-step.on-modalizer

Finally, relevant to the lexicalization of stems is an observation by Hopkins (1988) about forms exhibiting two "layers" of noun incorporation. She notes that only lexicalized stems can participate in a second layer of incorporation, and thus in a sense there can be only a single transparent or accessible incorporation per word. I distinguish two types: whether the incorporating verb or the incorporated noun is lexicalized. In both types a complex stem is argued to behave as a unit, equivalent to a morpheme. The incorporating verb is a lexicalized noun-verb combination in (11), (12), and (13). The verb root -i:l/-é:l- occurs only with the incorporated noun roots -hnek- 'liquid' and -nu’t- 'milk', with irregular phonological adjustment in the latter case. The lexicalized stem -hneki:l- means 'drink' while -nu’ké:l- means 'suck'. -hneki:l- can further incorporate another noun, e.g. -nu’t- 'milk', as in (13), with the resultant transparent meaning 'drink milk'.
(11) khneki:lha' I drink.
    k-hneki:l-ha' < *k-hnek-i:l-ha' 

(12) knu'ké:lha' I suck (milk).
    k-nu'ké:l-ha' < *k-nu't-é:l-ha' 
    lsg.agent-suck-habitual < lsg.A-milk-drink-hab

(13) knu'tahneki:lha' I'm drinking milk.
    k-NU'T-a-HNEKI'L-ha' 
    lsg.agent-MILK-epen-DRINK-habitual

The incorporated noun consists of a lexicalized noun-verb stem in (14) and (15). In this case, either the nominalizer or the instrumental morpheme is suffixed to the stem as a prerequisite to incorporation. (14) contains an incorporated stem -anitskwáhlátsl- 'chair'. (15) from Mohawk contains the lexicalized stem -'sereht-'vehicle', which is built on the root that is also the incorporating root. The lexicalized stems are enclosed in square brackets.

(14) lotanitskwáhlátslote' He has a chair standing.
    lo-t-[an-itskw-a-hl-á'-tsl]-ot-e'
    masc.sg.patient-semi.reflexive-[semi.reflexive-thigh-epen-place.upon-epen-nominalizer]-stand-punctual

(15) ke'serehti:sere' I'm pulling a sleigh,
    ke-['sere-ht]-i-sere'
    lsg.agent-[drag-inst]-epen-drag-stative

In summary, semantic non-compositionality, misanalyses by speakers, phonological fusion, and two layers of incorporation are evidence that some internally complex stems are not derived from morphemes.

3. WORDS. The discussion of stems has involved what would be classified as derivation to the extent that a distinction between derivation and inflection exists. In this section, inflectional as well as derivational categories play a role.

A formal category of nouns exists in Oneida, but the majority of functional nominals are verbal derivatives or forms which are structurally indistinguishable from verb forms. In this paper it is impossible to give any sense of completeness to the description of deverbal nouns, so I will give examples of just three constructions, arguing that in at least some cases they provide evidence for the listing of complete words in the lexicon.
3.1. HABITUAL ASPECT. The forms in (16) and (17) represent the habitual aspect of verbs that describe actions that may be construed as occupations as well as serial actions. These forms are used both nominally and verbally depending on the larger context. Varying the pronominal prefix of the stems does not have any effect on the dual function of these forms, as the glosses of (16) and (17) indicate (cf. Mithun 1979). However, the habitual aspect may become lexicalized with a particular prefix, as has happened in (18). With patient prefixes, the root -sle- means 'drive', as in the first word in (18); with an agent prefix and the semi-reflexive it means 'crawl', as in (19); and with the neuter agent prefix and the semi-reflexive it means 'sleigh', as in the second word in (18). In the meaning 'sleigh' the neuter form is "frozen", so that varying the prefix results only in the literal meaning 'crawl'. Some habitual forms are used almost exclusively as nominals, e.g. (20).

(16) la'swátha' He extinguishes; fireman.
    la-'swát-ha'
masc.sg.agent-extinguish-habitual

(17) lu'swátha' They extinguish; firemen.
    lu-'swát-ha'
masc.pl.agent-extinguish-habitual

(18) ló-sle' waté-slehse'. He drives a sleigh.
    ló-sle-' # w-até-'sle-hse'
masc.sg.patient-drag-stative # neut.agent-
    semi.reflexive-drag-habitual

(19) luté-slehse' They crawl.
    lu-té-sle-hse'
masc.pl.agent-semi.reflexive-drag-habitual

(20) watahsátálha' T.V., movies.
    w-at-ahsat-á-l-ha'
    neut.agent-semi.reflexive-shadows-epen-be.in-hab

3.2. INSTRUMENTALS. A second type of deverbal nominal is formed by affixing the instrumental morpheme -ht/-t/-st/-hkw/-hkw- to a stem and inflecting it with either the feminine-indefinite or feminine-zoic pronominal prefix. This construction retains verbal properties as well as taking on nominal properties. For example, (21) has the literal meaning 'they use it to write with' and the lexicalized meaning 'pencil'. Affixing a different verbal pronominal prefix, as in (22), results in the literal meaning 'use it to write
with’ while affixing a nominal possessive prefix, as in (23), results in the meaning ‘possessor-pencil’.

(21) yehyatúkhwa’
ye-hyatú-KHW-a’
fem.indef.agent-write-INST-habitual

She/people use it to write with; pencil.

cf. yehya’túhe’
ye-hya’tú-he’
fem.indef.agent-write-habitual

She writes.

(22) lahyatúkhwa’
la-hyatú-KHW-a’
masc.sg.agent-write-INST-habitual

He uses it to write with.

(23) laohyatúkhwa’
lao-hyatú-KHW-a’
masc.sg.possess.-write-INST-habitual

His pencil.

Idiosyncratic properties of these two constructions, then, are the effect of varying the pronominal prefix and the nominal meaning. Further, it is clear that at least the instrumental nominals are not fully productive. The nominal in (24)—also an implement, the same general semantic class as ‘pencil’—has no instrumental morpheme and is a reduced form of the verb in (25) in that it has undergone deletion of a word-initial underlying glide. The forms in (26) and (27) do appear to contain an instrumental -st-, but again the nominal in (26) is reduced. In addition, the verb forms in (25) and (27) require the dualic prefix while the nominals occur without it.

(24) ata’shalli’sás
(w)-at-a’shal-i·sá-s
neut.agent-semi.reflexive-knife-??-habitual

scissors

(25) teyuta’shalli’sás
te-yu-t-a’shal-i·sá-s
dualic-fem.indef.agent-semi.reflexive-knife-??-hab

She’s using the scissors.

(26) ata’khétsta’
(w)-ata’khétST-a’
neut.agent-skate-habitual

skates

(27) tehuta’khétsta’
te-hu-ta’khétST-a’
dualic-masc.pl.agent-skate-habitual

They’re skating.

That the verb and the related nominal differ in their selection of other morphemes is not infrequent.
The verb -uhew- 'sweep' in (28) optionally occurs with the semi-reflexive, and the instrumental verb in (29) apparently requires it, but the nominals in (30) and (31) never have it.

(28) yakuhe'wás / yutuhe'wás  She sweeps.
yak-uhé-wás / yu-t-uhé-wás  fem.indef.agent-(semi.reflexive)-sweep-habitual

(29) yutuhevá·tha'  She sweeps with it.
yu-t-uhé-á·t-ha'  fem.indef.agent-semi.reflexive-sweep-epen-inst-habitual

(30) yakuhevá·tha'  broom
yak-uhé-á·t-ha'  fem.indef.agent-sweep-epen-inst-habitual

(31) akuhevá·tha'  my broom
ak-uhé-á·t-ha'  lsg.possess-sweep-epen-inst-habitual

3.3. REPETITIVE PREPRONOMINAL PLUS INVARIANT PRONOMINAL. The third type of deverbal nominal has the repetitive prepronominal prefix in its function as 'characterizer' (Lounsbury 1953:49) and an invariant pronominal prefix. These nominals are semantically opaque, although speakers provide literal meanings for some of them, but not all. I have found that speakers hesitate to provide a literal meaning for (32), for example. Attempts to vary the pronominal prefix are unsuccessful. For example, (32) is reluctantly glossed as 'Your rag is bad'.

(32) skvhnáksv'  fox, it of the bad skin
s-k-vhn-áksv'  repetitive-fem.zoic.sg.agent-skin-be.bad-stative

(33) shá·yese'  thimbleberry, long berry
s-h-á'y-ese'  repetitive-masc.sg.agent-berry-be.long.stative

In addition to opaque semantics, these nominals exhibit two other properties that support their lexical status as words. First, the pronominal prefix category is not predictable—cf. the prefixes in (32) and (33). Second, a verb form that has such a nominal as subject or object does not necessarily agree with the nominal in gender. This is because the pronominal prefix of the nominal, e.g. the feminine-zoic in (32), is "frozen". In the excerpt from Michelson (1981) in (34) the actions of
the fox, *skyhnáksv'*, are described with the masculine pronominal, but this does not affect the gender of the pronominal in the form for 'fox'.

(34) Nók tsi' elakwí né na'kawhyuháti'
      But where on the other side a side of the river
nukwá' lotukhohtuháti' skyhnáksv.
      the side where he.is.going.along the bad-skinned one

'Only the fox was on the other side of the river. It was walking along.'

I have tried to show that the properties of stems and words cannot in all cases be derived from the properties of smaller components. This is not to say, though, that speakers cannot identify some of them as internally complex structures. I turn now to cases of more productive morphology, which entail greater semantic, morphosyntactic and phonological regularity.

4. MORPHEMES. As mentioned in the introduction, undeniably in many cases semantic, morphosyntactic, and phonological regularities can be attributed to constituents smaller than the stem or word. Further, there exist constructions which are completely, or nearly completely, productive. This section of the paper is devoted to three constructions—noun incorporation, benefactives, and non-occurring stems—which provide some evidence for the salience of the morpheme in Oneida. However, some problems with the formal status of morphemes are also identified.

4.1. NOUN INCORPORATION. The stems in (35) are all taken from a story about how the bear lost his tail (Michelson 1981). The incorporated noun root */-itas/-*/-vtahs- 'tail' occurs in each of these examples. Body part incorporation is transparent semantically and morphosyntactically and perhaps the most productive verbal construction.

(35) ya'kanitáhsyhte'  I immersed my tail.
    ya'-k-an-ITAHS-vht-e'
    translocative.factual-1sg.agent-semi.reflexive-TAIL-drop-punctual

tahanitahso'kó·  He pulled his tail out
    ta-h-an-ITAHS-o'kó·
    cislocative-factual.mode-masc.sg.agent-semi.reflexive-TAIL-pull.out.of.water.punctual
vshanitahsóthsi' He will pull his tail
v-s-h-an-ITAHS-ót-hsi-' out.
future.mode-repetitive-masc.sg.agent-semi.reflexive-
TAIL-stand-reversive-punctual

thvtahsó'lu His tail is stuck.
t-h-VTAHS-ó'lu
cislocative-masc.sg.agent-TAIL-be.stuck.stative

yah te'shvtáhsute' He has no tail attached.
yah te'-s-h-VTAHS-ut-e'
NEG neg-repetitive-masc.sg.agent-TAIL-attach-stative

The passage from Michelson (1981:13) in (36) shows that incorporation of other roots can also be quite productive; it contains several instances of the noun root -ks- ‘dishes’ although the normal noun for dishes is built on a different root, -atsyv-.

(36) Tayukwaksaló'loke', tseyyá-tat kvs
We gathered up the dishes one person
tayeksohaléni', oyá nén tayeksokewánih,
someone washed dishes, the other someone wiped dishes
khále' oyá nén sayutev'túni' atsyv'shúha...
and the other someone put them dishes
away again

The examples in (37) through (41) are all the result of incorporating English nouns into Oneida verbs. Note that the nominalizer morpheme is required of all English nominalizations. Once my Oneida acquaintances realized how much I enjoyed this type of example, they constantly produced them. Some came up in other contexts: (37) is used regularly in recipes, and ‘tea’ in (39) is quite productively incorporated.

(37) tekakháspleke two cups
te-ka-cup-sl-ake
dualic-neut.agent-cup-nominalizer-numerator

(38) wahajabsli'sáke' He's looking for work.
wa-ha-job-sl-i'sák-e'
factual.mode-masc.sg.agent-job-nominalizer-
search.for-punctual

(39) stitslahnekí:la Drink a cup of tea!
s-ti-tsl-a-hnekí:la
2sg.agent-tea-nominalizer-epen-drink-imperative
(40) katswetetslu'nîhe' I'm making myself a sweater. 
k-at-sweetet-sl-unî-he' 
1sg.agent-semi.reflexive-sweater-nominalizer-make-habitual

(41) takbirtslanut Give me a beer! 
tak-beer-tsl-a-nut 
you.me-beer-nominalizer-epen-give.imperative

4.2. BENEFACTIVES. The benefactive morpheme regularly adds an argument to the verb with the resultant meaning 'do something for the benefit of someone'.

(42) wahotvna'tslúni' She made lunch for him. 
wa-ho-tvhna'tsi-úny-v' [-únyv' --> -úni'] 
factual.mode-she.him-lunch-make-BEN-punctual

(43) wa'kuyatvnvtshakétskwhase' I raised my arm for you. 
wa'-kuy-atv-nvtsh-a-kétskw-a-HS-e' arm for you. 
factual.mode-1.you-semi.reflexive-arm-epen-raise-epen-BEN-punctual

cf. wa'katvntshakétsko' I raised my arm. 
wa'-k-atv-nvtsh-a-kétsko' 
factual.mode-1sg.agent-semi.reflexive-arm-epen-raise-punctual

The benefactive has different alternants in the different aspects, a point I will return to below. Which alternant occurs is generally predictable from phonological properties of the stem. The alternants that occur in the punctual aspect are outlined in (44). Vowels in parentheses indicate epenthetic vowels.

(44) -v- : stems in -ht, -Vkw, -uny-/uni-
-hahs(e)- : stems in -l, -Vt
-hs(e) : stems in -Vkw, -'k
-(a)hs(e)/-(a)'s(e) : all other stems

Thus benefactive stems are generally regular semantically, morphosyntactically, and phonologically. Benefactives nevertheless pose a problem in that they do not permit a simple "layered" theory of the morphological component, whereby words are built up layer-by-layer. As mentioned above, the benefactive has several series of alternants, and which series occurs correlates with the phonological shape of the base to which the benefactive attaches. But which alternant in each series occurs depends on which aspect suffix follows the benefactive. This has been called a "look-ahead" construction by Simpson and Withgott (1984) in their
discussion of "layered" versus "template" languages. For example, the alternant -v:ní- occurs before the habitual -he' in (45), while -s- occurs before the punctual -e' in (46).

(45) liy-attok-v:ní-he' I notice something about him. I.him-notice-ben-habitual

(46) wa-hiy-attok-á-s-e' I noticed.... factual.mode-I.him-notice-even-ben-punctual

The benefactive may become lexicalized and even inseparable from the stem. E.g., the meaning of the stem -nuhwaktani-/nuhwaktv- 'be sick' is not obviously derivable from -nuhwakt- 'to hurt, pain' plus benefactive. The benefactive cannot be stripped from -u'weskwaní/-u'weskwy- 'enjoy', since *-u'wesk- does not exist. Lastly, the benefactive does not always transparently add the meaning 'for someone', if the verb has been lexicalized. Thus the benefactive of 'telephone' -atwynata- simply adds an argument, as in wa'shakotwvnátahe' 'He telephones someone' (wa'-shako-t-wvn-á-ta-hs-e' factual.mode-he.her-semi.reflexive-voice-even-put.into-benefactive-punctual); cf. (2).

4.3. NON-OCCURRING STEMS (cf. Aronoff 1976). As linguists, we frequently isolate elements by virtue of their participation in larger constructions, even if the element does not occur independently as an inflectable unit. Evidence that such elements are sometimes analyzed by speakers are expressions like the one in (47), which I have heard on more than one occasion. -tok- does not occur as a stem, i.e., it cannot directly be inflected with pronominal prefixes and aspect suffixes. Outside of the expression in (47), -tok- occurs only as part of the stem -attok- 'notice, perceive', which would otherwise be analyzed as composed of the semi-reflexive plus -tok-. However, at the same time as speakers apparently analyze -attok- as internally complex, they also must "know" that -tok- does not occur as a stem.

(47) He's got no tok, i.e. He's got no smarts.
  cf. -attok- 'perceive, notice' (?!-at-tok-, semi.reflexive-be.smart/notice)

5. SUMMARY AND DISCUSSION. The Oneida lexicon is characterized by extensive lexicalization as evidenced by semantic opacity, by "frozen" prefixes and other morphemes, and sporadic fusion. Stems and words have properties that cannot be described as the result of simply concatenating morphemes, suggesting that the
Oneida lexicon is extremely rich, and the role of the morpheme, as conceived of in many current theories of the morphological component, is relatively small. This conclusion does not deny that there exists a continuum of accessibility to speakers of aspects of complex constructions. Rather it suggests that lexical redundancy rules play a more significant role than word-formation rules.

NOTES
2 I thank G. Michelson for pointing out this example.
3 -tok- does occur as a stem in related languages, such as Seneca, where it means 'see' (Chafe 1967:84).

REFERENCES