Noun and verb in Iroquoian languages: Multicategorisation from multiple criteria

Marianne Mithun

1. Introduction

Recent typologies of lexical categories have pointed to the Iroquoian languages as counter-examples to the universality of the noun-verb distinction. In fact the distinction is particularly robust in these languages. The languages do, however, show us the importance of considering a full range of criteria in categorisation.

Several kinds of criteria are typically considered in the identification of lexical categories. Often judgements are first made on the basis of meaning: words for objects are classified as nouns, and words for actions are classified as verbs. Next may be morphological structure: words containing markers of number, gender, and/or case are identified as nouns, while those containing markers of tense and/or aspect are identified as verbs. Finally, syntactic function may be taken into account. Words used as nominals to refer are often classified as nouns, and those used to predicate are classified as verbs. The three criteria may not be equally diagnostic for a particular language, since details of morphological and syntactic structure vary so widely from one language to the next. Furthermore, all criteria may not yield the same classification for a given language. What might be identified as a verb on formal morphological grounds, for example, might function semantically or syntactically as a nominal to designate an object. The Iroquoian languages show just this situation.

2. The Iroquoian language family

The Iroquoian family covers a wide area in eastern North America. The lone attested representative of the Southern branch, Cherokee, is now spoken primarily in North Carolina and Oklahoma. The Northern languages are centred in the Northeast, primarily present Ontario, New York State, and Quebec. Oneida is spoken in Wisconsin as well, and Wyandot was spoken until recently in Oklahoma. Additional Iro-
quoian languages have disappeared. Relations among the modern Iroquoian languages are schematised in Figure 1.

```
Proto-Iroquoian
   /           \
Southern Iroquoian Northern Iroquoian
   /   \
Tuscarora-Nottoway Proto-Lake-Iroquoian
   /   \
Huron-Wyandot Five Nations Iroquoian

Cherokee Tuscarora Wyandot Seneca Cayuga Onondaga Oneida Mohawk
```

Figure 1. The Iroquoian family

Lexical categories are distinguished in all of the languages in essentially the same ways. In what follows, each of the usual formal and functional criteria for identifying lexical classes will be considered in turn. It will be seen that all yield clear categorical distinctions.

3. Morphological structure

Three kinds of words can be distinguished in the Iroquoian languages on the basis of their internal structure: particles, nouns, and verbs.

Particles by definition have no internal structure, though they may be compounded. Examples of Cayuga particles include ɒ:nɐ ‘now’ and ki: ‘just’.

Nouns have the basic structure shown in Figure 2.

```
<table>
<thead>
<tr>
<th>PREFIX</th>
<th>NOUN.STEM</th>
<th>NOUN.SUFFIX</th>
</tr>
</thead>
</table>
```

Figure 2. The noun

Examples of nouns can be seen in the Cayuga examples in (1). Cayuga material cited here comes from the speech of Reginald Henry, Jimmy Sky, Marge Henry, Jake Skye, Lizzie Skye, and Alfred Key, all of Six Nations, Ontario.

(1) Sample nouns: Cayuga

<table>
<thead>
<tr>
<th>a.</th>
<th>ɒ:nɐ</th>
<th>ɒ:nɐ-ɨn-ak</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOTIV-ACC-SUFFIX</td>
<td>NEUTER-SQUASH-AGENT-SUFFIX</td>
<td></td>
</tr>
</tbody>
</table>

‘grease, lard, fat’

<table>
<thead>
<tr>
<th>a.</th>
<th>ɒ:nɐ-ɨn-ak</th>
<th>ɒ:nɐ-ɨn-ak-a</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEUTER-SQUASH-AGENT-SUFFIX</td>
<td>NEUTER-SQUASH-AGENT-SUFFIX</td>
<td></td>
</tr>
</tbody>
</table>

‘squash, melon, cucumber’

The noun prefix specifies gender. Terms for inanimate objects, which constitute the overwhelming majority of nouns in the lexicon, carry neuter prefixes. The neuter prefixes do not distinguish number. On possessed nouns, the prefix specifies the possessor, distinguishing person, number, gender, and alienability.

(2) Possessive prefixes: Cayuga

<table>
<thead>
<tr>
<th>a.</th>
<th>ɨk-ɒ:nɐ-ɨn-ak</th>
</tr>
</thead>
</table>

‘my squash’

<table>
<thead>
<tr>
<th>a.</th>
<th>ɨk-ɒ:nɐ-ɨn-ak</th>
</tr>
</thead>
</table>

‘my squash’

The internal structure of verbs is considerably more complex than that of nouns. It is schematised in Figure 3. Only the pronominal prefix, verb root, and aspect suffix (perfective, imperfective, or stative) are obligatory. Some sample verbs can be seen in (3).

(3) Sample verbs: Cayuga

<table>
<thead>
<tr>
<th>a.</th>
<th>ɨhæt-k:ɨt-ɛt-wi</th>
</tr>
</thead>
</table>

‘he’s carrying the suitcase away’

<table>
<thead>
<tr>
<th>a.</th>
<th>ɨs-hæt-ɛt-yæk-at:ɛt-kæ</th>
</tr>
</thead>
</table>

‘when we met’
category: all words are either particles or verbs. Those words customarily recognised as nouns would be classified as verbs. The proposal has been reiterated in several additional publications (Sasse 1991, 1993a, 1993b). In his first paper Sasse (1988: 176–177) explained how he had been led to his hypothesis. In reading Lounsbury’s 1953 Oneida verb morphology, he was struck by the fact that Oneida words such as ohkwali ‘bear (the animal)’ contain a prefix o- that is somewhat similar in shape to a prefix yo- that appears on verbs. Because of the similarity, he identified the prefix as a transitive pronoun representing an indefinite subject plus neuter object. Thus o- ohkwali would be literally “es/sie (impersonal) bârt ihn (den Bären)” [‘it/she bears it’], with ‘bear’ understood in the sense of ‘animal’. The Cayuga noun o’hnai ‘oil, grease, gravy, gas, fat’ seen in (1), with a cognate prefix, was analysed as ‘es fettes’ [‘it fattes it’] (Sasse 1988: 182). As further evidence for his hypothesis, Sasse asserted that words traditionally classified as nouns carry aspectual markers, and identified the suffixes on both the Oneida noun kana:kal-e? ‘pole’ and the verb ka:nikhu-he? ‘she sews’ as punctual aspect. Thus traditional nouns were analysed as containing a portion of the internal structure of verbs, that is, a pronominal prefix, stem, and aspect suffix. Both the prefix and suffix analyses are unfortunately problematic.

3.1. The prefix

The prefixes that appear on nouns do show intriguing similarities to those on verbs. They also show systematic differences in both form and function.

For verbs, three paradigms of pronominal prefixes can be identified, two intransitive sets and one transitive set. The prefixes identify the core arguments of the clause and follow a semantically-based agent/patient pattern. Participants who instigate and control events are generally represented by agent pronouns, while those who are not in control but are affected are usually represented by patient pronouns. In (4), the dog is represented by an agent pronoun ka- ‘it’ (Set I) when barking, but by a patient pronoun yo- ‘it’ (Set II) when sleeping. The Oneida forms cited here come from the speech of Mercy Doxtater, and from Lounsbury 1953, Abbott—Christjohn—Hinton 1996, and Karin Michelson, who has provided helpful discussion as well.

(4) Intransitive pronominal prefixes on verbs: Oneida

a. Set I: Agents
   - kahnyânyuhe?
   - ka-hnyânyu-he?
   - neuter.agent-bark-IMP
   - ‘it (a dog) barks’

b. Set II: Patients
   - yô:tyâs
   - yô-itaʔ-s
   - neuter.patient-sleep-IMP
   - ‘it’s sleeping’
The agent/patient case distinction is categorial and lexicalised, though a semantic motivation can usually be discerned (Mithun 1991). Speakers do not select cases as they speak: some verbs are simply lexicalised with Set I (agent) pronouns and others with Set II (patient) pronouns, and speakers learn the appropriate forms when they learn the verbs. Participants in inherent states are usually represented by agent pronouns (ka-naskwáka ‘it is a bad animal’), while those affected by resultant states are represented by patient pronouns (yo-haháksa ‘it is a bad road’). Intransitive perfects are classified as resultant states, so their participants are categorised grammatically as patients (te-ká-lis ‘it breaks’, te-yo-hili ‘it has broken’).

The pronominal prefixes on transitive verbs represent two parties.

(5) Transitive pronominal prefixes on verbs: Oneida

khekétkwas
khe-ketskw-as
1SG.AGENT.FEMININE.INDETERMINATE.PATIENT-RAISE-IMPERF
‘I get her up (in the morning)’

First, second, and third persons are distinguished in the pronouns; singular, dual, and plural number; inclusive and exclusive first person; and neuter-zoic, feminine- indefinite, and masculine genders in third person.

Not all categories are distinguished in every combination. Importantly, neutrals are not represented within the pronominal prefix complex unless no other participant is present. Thus the same agent prefix k- ‘I’ is used in the verbs ‘I am running’, ‘I am pounding (it)’, and ‘I see (it)’. There is no overt mention of the ‘it’. The same patient prefix wak- is used in ‘I’m sleeping’ and ‘(it) bites me’.

(6) Oneida pronouns without overt neuter markers

a. kükheʔ k-?aʔiتف
  k-takheʔ  k-ʔaʔiتف
  1SG.AGENT-Run-IMP  1SG.AGENT-Pound-IMP
  ‘I’m running’ ‘I am pounding (it)’

b. waki:tá:s wak-kalyas
   wak-itaʔ-s wak-kal-as
   1SG.PATIENT-Sleep-IMP  1SG.PATIENT-Bite-IMP
   ‘I’m sleeping’ ‘(it) bites me’

If both arguments of a clause are neuter, it is the agent that is represented. Thus in (7), the carrier is specified by the agent pronoun ka-, but the object carried is not overtly mentioned.

(7) Oneida neuter agent

kaha:wi:
ka-hawi?
NEUTER-AGENT-carry-IMPERF
‘it’s carrying (it)’

The system is essentially the same in all of the Northern Iroquoian languages.

The prefixes on nouns differ in both form and function from those on verbs. Their shapes are similar but not identical. The vast majority of nouns in the lexicon are neuter-zoic, referring to objects and animals. The Oneida neuter-zoic prefixes for verbs and nouns are compared in (8).

(8) Neuter-zoic prefixes: Oneida

a. Verbs Nouns
   Set I (agents) Set I
   w- – before a, e, u
   y- – before o, u
   ka- ka-
   before consonants, i

b. Verbs Nouns
   Set II (patients) Set II
   yaw- aw- before a, o
   ya- – before o, u
   yo- o-
   before consonants, a, i

As can be seen, the prefix on o-hkwáli ‘bear’ is a simple neuter-zoic noun prefix, different in form from that which appears in verbs like yo-tá:s ‘it is sleeping’. There is little reason to posit that either the verb prefix yo- or the noun prefix o- is transitive, as Sasse has proposed; there is no evidence of a second party in their meanings and, as seen in (8), a combination of neuter agent plus neuter patient would be represented by an intransitive agent prefix (w-, y-, ka-). Sasse’s analysis of the Set II prefixes, including o-, as transitive (‘it bears it’, ‘it fats it’) may have been prompted by English translations of sentences like ‘(it) bites me’ in (6b’). The Iroquoian prefix represents only one party, though the English translation must mention two.

As noted earlier, noun prefixes in Iroquoian languages are also used to specify possessors. Inalienable possession is marked with Set I prefixes similar to those used for grammatical agents in verbs, and alienable possession with Set II prefixes similar to those used for grammatical patients. (Terms for body parts with external surfaces always include a locative enclitic, here =ke.)
(9) Possession: Oneida

a. Inalienable: Set I
   *ke-wy̱škalaː* ke  ‘(on) my thumb’
   *ka-wy̱hsataː* ke  ‘(on) its wing(s)’

b. Alienable: Set II
   *ake-hsi:sáht*  ‘my pestle’
   *ao-isi:nd kwa?*  ‘its nest’

Though the possessive prefixes are similar in form to the pronominal prefixes on verbs, they are not identical, as can be seen by comparing the prefixes in (10).

(10) Some additional verb and noun prefixes: Oneida

a. Set II  | Verbs  | Nouns  | Alienable
          | Patients |         |
1 SINGULAR | wak-    | akw-    | before a
          | wake-   | ake-    | before consonant clusters or ?
          | wak-    | ak-     | elsewhere
1 DUAL     | yuko-   | uky-    | before a
          | yukn-   | ukn-    | before other vowels
          | yuki-   | ukni-   | before consonants
1 PLURAL   | yakwa-  | akwa-   | before consonants, i
          | yako-   | ak-     | before o, u
          | yakw-   | akw-    | before other vowels
MASC.SG    | lo-     | lao-    | before consonants, i, a
          | law-    | law-    | before e, a
          | la-     | la-     | before o, u
FEM.INDEF  | yako-   | ako-    | before consonants, i, a
          | yakaw-  | akaw-   | before o, u
          | yaka-   | aka-    | before e, u

b. Set I  | Verbs  | Nouns  | Alienable
          | Agents  |         |
1 EXCL.DUAL| yako-   | aky-    | before a
          | yakn-   | akn-    | before other vowels
          | yaki-   | aki-    | before consonants
1 EXCL.PL  | yakwa-  | akwa-   | before consonants, i
          | yako-   | aky-    | before o, u
          | yakw-   | akw-    | before other vowels
FEM.INDEF  | yako-   | aky-    | before e, a, o
          | yu-     | u-      | before [a] which is then lost
          | ye-     | e-      | before consonants, i

Differences can be appreciated by comparing the words in (11).

(11) Some verb-noun comparisons: Oneida

a. *wak-atolisha?*  ‘I’m resting’
   a’. *akw-áhta?*  ‘my shoe’

b. *ló-wta?*  ‘his shoe’
   b’. *lo-tolisha?*  ‘he’s resting’

There is further differentiation between the verb and noun prefixes within the neuter-zoic category. In verbs, zoic prefixes, used for animals (and in Oneida, Mohawk, and Onondaga for some women) distinguish number, but in nouns, they do not. (There are special plural forms of the zoic possessive prefixes, singular *ao-* plural *ao-ti-aon-*, but these are not used on basic nouns for animals: *ohka:li* ‘bear/bears’.)

(12) Zoic plural prefixes: Oneida

a. Set I  | Verbs  | Nouns  |
          |         |        |
ZOIC.DUAL | ktn-    | ka-    | before consonants, i
          | ky-     | –      | before a
          | kn-     | –      | before other vowels
ZOIC.PL   | kuti-   | ka-    | before consonants
          | kw-     | –      | before other vowels
          | kun-    | –      | before [a] which is then lost

b. Set II | Verbs  | Nouns  |
          |         |        |
ZOIC.PL   | yoti-   | o-     | before a
          | yon-    | o-     | before other vowels
          | yon-    | –      | before other vowels

The differences between noun and verb are easily reconstructible for Proto-Northern Iroquoian. Tuscarora, the most divergent of the Northern languages, shows them as well. The Tuscarora verb *yu-tura:nihrph* ‘it has a husk’, for example, shows the neuter prefix *yu-* but the noun *u-ti:ra:kh* ‘husk’ shows the regular noun prefix *u-*.

With such pervasive differences in shape, it might be wondered how the verb and noun prefixes could be confused. Certain phonological developments in some of the
Five Nations languages may have been a factor. After his discussion of the Oneida material drawn from Lounsbury (1953), Sasse (1988) turns to Cayuga, basing his hypotheses on material from the grammar in Mithun—Henry (1982). Cayuga and its neighbours have undergone a loss of word-initial glides which has affected both the factual prefix *wak-* and some of the pronominal prefixes. As a result, certain verb prefixes now resemble noun prefixes, but only word-initially.

(13) Cayuga loss of initial glides

a. **hewak-hre:**
   **he-wak-hre:-**
   TRANSLOC-1SG.PATIENT-set-STATIVE
   ‘I’ve set it way up there’

a’. **ak-hre:**
   **wak-hre:-**
   1SG.PATIENT-set-STATIVE
   ‘I’ve set it up there’

b. **eyostáqi:**
   -yo-star-óti-
   FUTURE-NEUTER.PATIENT-drop-fall-PERF
   ‘it will rain’

b’. **ostákóyó:**
   yo-star-óti-ó
   NEUTER.PATIENT-drop-fall-STATIVE
   ‘it’s raining’

The verbs in (13a, b) show the basic shapes of the pronominal prefixes, and those in (13a’, b’) show the word-initial innovations.

Two other distinctive forms in the Set II possessive paradigm have also been regularised in these western languages. The first person singular prefix (Oneida *akw-*) now matches the patient pronoun *ak- on Cayuga verbs, and the masculine singular (Oneida *lao-) now matches the patient pronoun *ho-. The loss has not eliminated all differences between the noun and verb prefixes, however, even in word-initial position. The Set I neuter prefix (before *a, e, e*) remains *w-* on verbs but zero on nouns, and both Set I and Set II verb prefixes still distinguish number for zoics, but noun prefixes do not.

(14) Cayuga neuters and zoics on verbs

a. **wakýe:s ph**
   *w-atýes-č*
   NEUTER.AGENT.1-easy-STATIVE
   ‘it is easy’

a’. **ahtákwa**
   *(θ)-ahtákwa*
   (NEUTER.1)-shoe
   ‘shoe(s)’

b. **kátitaksónkýe:s**
   *kát-takse-no-kýe-s*
   ZOIC.PLURAL.AGENT.1-run-STATIVE-PROGR-DISTR
   ‘they (rabbits) run around’

b’. **kó:nhósa?**
   *ka-ñoks-a?*
   ZOIC.1-clam-NOUN.SUFFIX
   ‘clam(s)’

c. **a:kenaténýe:teq?**
   *a:-ken-aténýe-te?*
   OPTATIVE-ZOIC.PLURAL.AGENT.1-try-PERF
   ‘they (birds) should try ...’

c’. **awí:he:kó:wa**
   *(θ)-awí:he?-kó:wa*
   (ZOIC.1)-eagle=AUGMENTATIVE
   ‘eagle(s)’

d. **heyoÓyé:nha:k**
   *h-e-yoÓyé:nha:k*
   TRANSLOC-FUTURE-ZOIC.PL.PATIENT.II-catch-STATIVE.CONTIN
   ‘they (rabbits) will be caught there’

d’. **o:nó:kó:sa?**
   *o-ñoks-a?*
   ZOIC.1I-sunfish-NOUN.SUFFIX
   ‘sunfish(es)’

e. **onatkaté:qóh**
   *on-ata-kat-eq-o*
   ZOIC.PLURAL.PATIENT.II-be.number-stative=INFERENTIAL
   ‘they (rabbits) are numerous’

e’. **(o)trá:wihsta?**
   *o-atra-wihsta-a?*
   ZOIC.1I-bat-NOUN.SUFFIX
   ‘bat(s)’
The noun prefixes also differ from the verb prefixes in function. As noted above, the prefixes on verbs are pronouns identifying the core arguments of the clause. Set I prefixes represent grammatical agents, and Set II patients. The prefixes on possessed nouns can identify possessors. But what of the prefixes on unpossessed nouns? They do not distinguish the semantic or syntactic roles of participants, as can be seen in (15). The noun prefixes remain the same whether the nouns represent grammatical agents of clauses or grammatical patients.

(15) Not syntactic case: Oneida

a. yo-t:i:s  ohkwa:li
   yo-ita?:s  o-ahkwali
   NEUTER.SET.II-sleep-IMPERF  NEUTER.SET.II-bear
   ‘the bear is sleeping’

b. kâ-t:i:ke?
   kâ-takhe?:
   NEUTER.SET.II-run-IMPERF  NEUTER.SET.II-bear
   ‘the bear is running’

c. kâ-ha:wi:
   kâ-hawi?:
   NEUTER.SET.II-carry-IMPERF  NEUTER.SET.II-bear
   ‘the bear is carrying it around’/it’s carrying the bear around’

Neither is any distinction of agency obvious within the inherent meanings of the nouns themselves. A few examples of typical nouns in each class are in (16).

(16) Five Nations Iroquois noun classes

a. Some typical Set I (ka-) Iroquois nouns
   bag, door, cloth, cradleboard, bottle, bow, arrow, rope, petticoat, head-  
   dress, drum, mortar, pestle, bucket, tray, bed, pillow, dish, basket, ladder,  
   bread, pipe, sock, hoe, axe, knife, spear, blanket, house, wall, floor,  
   rafter, boat, town, etc.

b. Some typical Set II (o-) Iroquois nouns
   head, feather, tail, water, ice, air, liquid, current, ice, snow, spark, flame,  
   ash, coal, smoke, earth, sand, mud, gravel, stone, cloud, star, root, grass,  
   leaf, egg, flower, potato, meat, milk, bulrush, pine, insect, chipmunk, rust,  
   colour, etc.

The evidence is in fact stronger for French than for Oneida, because the forms in the noun phrase are exactly the same as those in the verb phrase. The formal similarity is no accident; we know that there is a diachronic connection between the two. We also know that though their functions are related, they are not the same. The similarity has not led us to posit a period in the history of French or Latin during which there was no noun category.

3.2. The suffix

The second point cited by Sasse as support for the elimination of the noun category from Iroquoian is his hypothesis that words traditionally classified as nouns contain aspect suffixes. The examples cited as evidence in his 1988 article are the Oneida kana:kál-e? ‘pole’ and ka:nikhu-he? ‘she sews’ (Sasse 1988: 176). Both are said to
contain a punctual (perfective) aspect suffix. In fact neither of these words contains a perfective suffix, and the similarity between the two suffixes is less than it appears. The suffix on the noun kana:kal-eŋ is actually only a glottal stop -ʔ. By regular rule in Oneida, an epenthetic -eŋ- is inserted between a word-final glottal stop and a preceding consonant. The suffix on the verb is actually the imperfective aspect -heŋ. The case for identifying the noun suffix -ʔ and the imperfective suffix -heŋ as the same morpheme is even less compelling when the small size of the consonant inventory is noted: t, k, s, ts, n, w, l, y, h, ŋ. The likelihood of chance similarity, involving only the phonetically unmarked -ʔ, is small.

Turning to Cayuga, Sasse identifies the suffixes on nouns as aspect markers here as well, or as a verb 'be' plus aspect suffix. (There are no copular verbs in these languages.) The Cayuga noun suffixes show a variety of forms, but the most common by far, as in the rest of the other Five Nations languages, is -aʔ: onə̱́:at-aʔ ‘potato’, onə̱́:kw-aʔ ‘milk’, onrát-aʔ ‘leaf’. It does not match any of the regular Cayuga aspect suffixes in shape. The Northern Iroquoian languages distinguish three basic aspectual categories: an imperfective (also termed habitual or serial), a perfective (also termed punctual), and a stative. The Cayuga noun suffix has apparently been likened most often by Sasse to the stative aspect. Statives show extensive allomorphy, but the most common forms are -eŋ, -e, -o, -oʔ, -eʔ, -eʔ, -i, -ʔ, vowel length, and zero. The sequence -eŋ sometimes appears as a noun suffix, but it is a result of vowel harmony. The noun for ‘corn’, for example, alternates between onə̱́:haʔ and onə̱́:heŋ. The sequence -eŋ does appear in both nouns and verbs. Sasse concludes that nouns and verbs share an aspect suffix of the shape -ʔ, that is, some vowel followed by glottal stop.

Given the vagueness of the match in both form and function, evidence for identifying the noun suffixes as aspect markers seems weak. A stronger case along these lines could actually be made for English or German. In English we find a suffix -s on both nouns and verbs: cat-s, walk-s. Both even mark a number distinction, plural on the first, singular on the second. Evidence is still stronger in German, where a suffix -en appears on both nouns and verbs: Frauen ‘women’, mach-en [make-Pl]. Both mark plural number. Yet so far no one has suggested that the distinction between nouns and verbs be abolished for either language.

In sum, when the morphological structures of verbs and nouns are examined both overall and in detail, there is ample formal evidence of a robust distinction between nouns and verbs.

4. Function

Other criteria commonly employed for distinguishing lexical categories are semantic, syntactic, and pragmatic: the meanings of items and their uses. The Iroquoian languages are of special interest in this regard.

Iroquoian words traditionally identified as nouns on morphological grounds form a tightly coherent class on semantic grounds as well. They name entities, usually objects or abstract ideas or persons: okwa: ‘wampum’, onhsotá: ‘disease’, oihwa: ‘matter, affair’, ow:ya: ‘baby’.

Syntactically nouns always function as nominals, identifying arguments.

(19) Cayuga nouns as syntactic nominals: Reg Henry, speaker

<table>
<thead>
<tr>
<th>Ne:ʔ</th>
<th>seʔ</th>
<th>hó:niʔ</th>
<th>onə̱́:kw:zéké</th>
<th>ehs:i:ʔa:k</th>
</tr>
</thead>
<tbody>
<tr>
<td>ne:ʔ</td>
<td>seʔ</td>
<td>hó:niʔ</td>
<td>o-nolʔ-aʔ=ke</td>
<td>e-hs-i:ʔuk</td>
</tr>
<tr>
<td>it’s</td>
<td>that</td>
<td>reason</td>
<td>NEUT.II-head-NOUM.SUF=LOC</td>
<td>FUT-2SG.AGENT-shoot</td>
</tr>
</tbody>
</table>

‘You will shoot it in the head’

<table>
<thead>
<tr>
<th>theʔ</th>
<th>tha:hrektθ̪eθ</th>
<th>o-twaʔaθ̪eθ</th>
</tr>
</thead>
<tbody>
<tr>
<td>theʔ</td>
<td>tha-a-hs-rektθ̪eθ</td>
<td>o-twaʔaθ̪eθ</td>
</tr>
<tr>
<td>not</td>
<td>CONTR-OPT=2SG.AGNT-spoiled-CAUS.PERF</td>
<td>NEUT.II-meat-NOUM.SUF</td>
</tr>
</tbody>
</table>

so that you will not ruin the meat.’

Perhaps because of his analysis of the prefixes, Sasse assumed that Iroquoian nouns can have a predicating function in themselves. This is actually not the case. Walking into a room, pointing, and uttering the word Kanhó:sha? ‘door’ has the same effect on a Cayuga speaker as saying Door! would have on an English speaker in the same context, or Tür! on a German speaker. In Cayuga, as in all of the Northern Iroquoian languages, the predication of identity is accomplished with various additional particles and/or a verb. A common identifying particle in Cayuga is ne:ʔ, translated by speakers as ‘it’s’.

(20) Cayuga identification: Marge Henry, speaker

<table>
<thead>
<tr>
<th>Ne:ʔ</th>
<th>ohaʔ</th>
</tr>
</thead>
<tbody>
<tr>
<td>ne:ʔ</td>
<td>o-hm-aʔ</td>
</tr>
<tr>
<td>it’s</td>
<td>NEUT.II-lard-NOUM.SUFFIX</td>
</tr>
</tbody>
</table>

‘It’s lard.’
The contrastive *hné:* also appears frequently in identification. Hearing a rustling in the woods, a speaker made the remark in (21).

(21)  

| Tsino:log-ē: | kye: | hné: | tshó: |
| o-tnsin-ñ: | kye: | hné: | tshó: |

*NEUTER.IL-derived-NOUN.SUFFIX*  
*guess CONTRAST.PRED*  
*only*

‘It’s just a mouse (not something to worry about).’

In several hundred hours of taped spontaneous speech in the various Northern languages, predominantly conversation, the use of a noun alone as a predication has never come up, though there have been numerous occasions on which objects were identified and described. When questioned directly about the possibility of predicative use of a noun in isolation, speakers of each of the languages have had similar reactions: first incredulity at the question, then amusement, and finally comments about ‘Pidgin Indian’.

A striking feature of natural speech in Iroquoian languages, however, is the relative rarity of nouns. It can be attributed in part to noun incorporation, as in ‘he suite-case-carried’ (cf. (3)). More important are the functions that verbs can serve.

Iroquoian verbs can function semantically just like verbs of other languages to express events and states, as seen in the examples above about carrying, running, pounding, biting, meeting, shooting, barking, sleeping, getting up, raining, resting, and being easy. Syntactically they can predicate, as also seen in those examples. Because they contain pronouns identifying their core arguments, they can also serve as complete sentences in themselves.

Verbs can and often do serve another function as well. They can be used as descriptive labels for entities (objects, animals, people) and even proper names.

(22) Morphological verbs as lexical nominals: Cayuga

a. *otekhonyátha?
*ye-ate-khw-oni-àt-ha?
*INDEF-AGENT-REFL-meal-make-INSTRUMENTAL-IMPERFECTIVE

‘one makes a meal with it’ = ‘restaurant’

b. *kaotanéhkwi
*ka-röt-a-nehkwi
*NEUTER-AGENT-log-EPENTHETIC-haul.IMPERFECTIVE

‘it hauls logs’ = ‘horse’

In this capacity, they can function syntactically as nominals.

(23) Cayuga verbal nominals: Reginald Henry, speaker

| K apt an éhkwi | hni? |
| ka-röt-a-nehkwi | hni? |
| NEUTER-AGENT-log-EPENTHETIC-haul-IMPERFECTIVE | too |
| tka:koč | ęvakwakóxhó? |
| ć-ka-koč | ę-yakwá-nox-wox-? |
| CISLOC-NEUTER-AGENT-necessary-STAT | FUT-1EXCL.PL-feed-DISTR-IMPERFECTIVE |
| ć-enxate-koč-wox | ę? |
| ć-kon-ate-koč-wox-łi | ę? |
| FUT-ZOIC.PL-REFL-meal-make-IMPERFECTIVE | PART CONTR |

‘We have to feed the horses too. They’ll eat [while we eat].’

If asked the meaning of *kaotanéhkwi*, Cayuga speakers normally respond ‘horse’. Though it has the morphological structure of a verb, it has been lexicalised as a nominal. The literal meanings of many verbal nominals are still accessible to speakers, but the origins of others have faded, and speakers express surprise at discovering them. Similarly, when asked “What would you like for breakfast?”*, most English speakers do not think about breaking their night-time fast, though they can usually be made aware of the literal meaning of *breakfast*.

Words like *otekhonyátha?* ‘restaurant’ and *kaotanéhkwi* ‘horse’ qualify as verbs on formal morphological grounds, but they function as nominals semantically and syntactically. Both classifications have grammatical implications.

Their morphological class remains crucial for their entry into certain further morphological formations. An important one is noun incorporation. Only morphological noun stems can be incorporated. The word *kaotanéhkwi* ‘horse’ is thus never incorporated. The Northern Iroquoian languages contain a number of terms for ‘animal’: Cayuga *kanyo:* ‘wild animal’, *katshé:né:k* ‘domestic animal’, and *kanhska:* ‘domestic animal’. Only the last can be incorporated because the first two are morphological verbs, literally “it is killed” and “it is tame”.

(24) Noun incorporation: Cayuga

| kanahskwi:yo: |
| ka-nahskwi:yo: |
| NEUTER.1-domestic.animal-be.good-STATIVE |

“it is animal-good” = “it is a good animal”

A derived noun stem may be incorporated, but a nominalising suffix must be present. (The languages differ as to whether the nominaliser always appears in free derived nouns. The term for ‘table’, for example, is a morphological verb ‘food is
When a morphological verb is used syntactically as a nominal to refer to animals, it shows the neuter-zioc prefix forms appropriate for nominals, with no number distinctions. In (23) above, ‘We have to feed the horses; they’ll eat while we eat’, the predicate ‘they’ll eat’ has a zoic plural prefix *ken-: e-ken-ate:khɔ:n:i?. The prefix *ka- on the nominal, *ka-ɔtənɛkhwiθ ‘horse’ does not distinguish number.

Syntactic function is also reflected in co-occurrence with enclitics. The enclitics may be attached to any word that is functioning semantically and syntactically as a nominal, regardless of its internal morphological structure. They include a locative, augmentative, characteriser (‘in the style of’), typicaliser (‘prototypical’), residential (‘people of’), distributive, and degressive (‘the late ..., the former ...’). The locative enclitic =ke ‘at/on/in’ can be seen in (28). The words ‘rock’ and ‘my elbow’ are morphological nouns and ‘longhouse’ and ‘doctor’, are morphological verbs (‘it is house-long’, ‘he cures’), but all are nominal in function.

(28)  
Locative enclitic =ke on syntactic nominals: Cayuga

<table>
<thead>
<tr>
<th>Morphological nouns</th>
<th>Morphological verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.  kaʔskwar:keh</td>
<td>b.  kanəhəs:keh</td>
</tr>
<tr>
<td>kaʔskwar-aʔ=ke</td>
<td>kaʔskar-es=ke</td>
</tr>
</tbody>
</table>
| NEUT.1-ROCK-NU. | NEUT.1-ROCK-STAT=
| SUFFIX=LOC       | LOC                  |
| ‘on the rock’     | ‘at the longhouse’ |

| a’.  ḥyusáʔkeh    | b’.  ḥateʔs:keh |
| ḥyus-aʔ=ke       | ḥateʔs:ke       |
| 1SG.1-ELBOW-NU. | MASC.SG.1-CURE- |
| SUFFIX=LOC       | IMPERF=LOC      |
| ‘on my elbow’    | ‘at the doctor’s’ |

Similar patterns can be seen with the other enclitics.

Distributive morphology reflects both morphological structure and syntactic function. There is one set of distributive suffixes that appear only on verbs and distribute events over space (‘here and there’). There is also a distributive enclitic that appears on words of any morphological structure so long as they function as nominals. The enclitic distributes entities over types (‘various’). In (29) below, the verb təyehehtawənéyehoh ‘people are hoing’ (‘one is stirring the dirt here and there’) is functioning as a predicate and has the verbal distributive suffix -h. The verb aseʔshoʔiʔoh ‘vegetables’ (‘it/they are new’) is functioning syntactically as a nominal and shows the nominal distributive enclitic =shoʔiʔ ‘various’.

(27)  
Zoic plural in verbs only: Cayuga

Kattkgh:iʔ:   seʔ  otsóʔaʔ.
Kati-ke:ho:-  seʔ  o-itsoʔaʔ.
ZOIC.PL.AGT-:EYEBE.GOOD-STAT  after.all  ZOIC.PATIENT-FISH-NU.|

‘They’re sharp-eyed, those fish.’
Cayuga distributives reflecting syntactic function: Reg Henry, speaker

ha:de:yə: ki?̂ ə-as-eʔ̂=səʔoʔ
many.things just NEUTER.I-be.new=STATIVE=DISTRIBUTIVE

ne?: əθ̈e:əkə̄yə teyehehtavənəwəh.oh.
ne?: əθ̈e:əkə te-yə-heht-awenye-kə-h
it.is that DUPL-INDEF.AGT.I-soil-stir=DISTRIBUTIVE-IMPERF

'They are hoeing various vegetables.'

Similar patterning can be seen with the past tense suffixes that appear only on morphological verbs and the decessive enclitic (‘the late or former’) that appears on any syntactic nominal, whether it be a morphological noun, verb, or particle.

Negative constructions also reflect the syntactic function of the item negated. Clauses are negated with a particle theʔ̂ plus a verbal prefix teʔ̂- or tĥê-.

Clausal negation on verbs: Cayuga

Tĥêʔ̂ teʔ̂-ŷø-tek-ha.
theʔ̂ teʔ̂-ŷø-tek-ha?
not NEGATIVE-NEUTER.PATIENT.II-burn-IMPERF

'It isn’t burning.'

Nouns, which never predicate, cannot be negated with the verbal prefix.

Impossible construction with nouns: Cayuga

*Tĥêʔ̂ teʔ̂-əo-hm-a.
theʔ̂ teʔ̂-o-hm-a?
not NEGATIVE-NEUTER.II-lard-NOUN.SUFFIX (meaningless)

A different construction is used to negate nouns.

Noun negation: Cayuga

Tĥêʔ̂ hne:ʔ̂ o-əm-ha əθ̈e:əkə.
theʔ̂ hne:ʔ̂ o-hm-a teʔ̂-ka-i-:
not CONTR NEUTER.I-lard-NOUN.SUF NEGATIVE-NEUT.1-X-STAT

'That’s not lard,
ohoniʔatá? hne:ʔ.
o-əhoniʔatá? hne:ʔ
NEUTER.II-potato-NOUN.SUFFIX CONTR

that’s potato.'

The negative construction in (32) is actually not limited to morphological nouns; it is used to negate any word that is functioning syntactically as a nominal. The same morphological verb appears in both (33a) and (33b), for example. In (33a) it is serving as a syntactic predicate, so it is negated with the regular verbal negative prefix teʔ̂-. In (33b) it is serving as a syntactic nominal so it is negated with the special negative construction used for nominals.

Negation of verb as syntactic predicate: Cayuga

theʔ̂ teʔ̂-ŷø-ate-nə-hk
not NEGATIVE-1EXCL.DUAL.AGT-REFL-be.related:STATIVE

'We’re not related.'

b. Tĥêʔ̂ hne:ʔ̂ akyə:te:ʔ̂-nə-hk tiʔ̂-eke:.
theʔ̂ hne:ʔ̂ akyə-ate-nə-hk teʔ̂-ka-i-:
not CONTR 1EXCL.DUAL.AGT-REFL-be.related:STAT NEG-NEUT.1-X-STAT

'That’s not my cousin.'

Identificational constructions are also sensitive to syntactic function. As noted earlier, nouns are not used alone to identify or characterise. They must be accompanied by a verb or particle, such as Cayuga ne:ʔ̂ or hne:ʔ, as seen in (20) ‘it’s lard’ and in (21) ‘it’s a mouse’. Morphological verbs functioning as nominals enter into the same constructions.

Predicative identification with verbal nominal: Cayuga

N̂e:ʔ̂ akhnəʔıs.
ne:ʔ̂ yə-kə-ʔ̂-s
it’s 1EXCLUSIVE.DUAL.AGT-go-IMPERFECTIVE=DISTRIBUTIVE
it’s we two go around together

‘This is my steady [girlfriend].’

Many morphological verbs are strongly lexicalised as nominals (‘horse’), and some are lexicalised as both predicates and nominals (‘we are related’/‘my cousin’). Verbs may also be used spontaneously as syntactic nominals. If their function would not otherwise be clear, it is clarified with various particles.
Spontaneous nominal use of verbs: Reg Henry, speaker

... nè: kyè akathrowihakyè? ne:? ne:?
    nè: kyè ak-atthrowi-hakyè? ne:? ne:?
this 1SG.PATIENT-tell-PROGRESSIVE it.is it.is

'[and also] this one I am telling about,

nè:kyè ne? kowiyåctatre?
ne:kyè ne? ko-wiy-ê-at-ê-e?
this the FEMININE.PATIENT-child-ANDATIVE-PURPOSIVE

the one who was going to have a baby,

o:nè ki? to:ketës tho nheyawêqoh
o:ne ki? to:ketës tho n-he-yaw-e?qo

now just truly there PART-TRANSLOC-NEUT.PAT-happen-STAT

that's just how it happened

to:ketës a?akowiyåcta? ...

to:ketës a?-ako-wiy-ê-a?

truly FACTUAL-FEM.PATIENT-child-lay-INCHOATIVE.PERF

she did have a baby ...

In addition to the grammatical and discourse particles like those in (35), there is a set of words that could be classified morphologically as particles because they have no internal structure, but that function semantically and syntactically as nominals. Some are onomatopoeic, like Cayuga kákâ: 'crow', some are loans like takú:s 'cat' (from Dutch de poes), and some are old words that were in the language before prefixes were present on all nouns or that are shortened forms of longer words, such as sà:no: 'racon' and tó:ti's 'salamander'. These words, too, show the characteristics of syntactic nominals, appearing with enclitics and entering into the negative and identificalional constructions for nominals.

5. Conclusion

There is thus a strong noun category in Iroquoian languages after all, by all the standard criteria. Nouns have distinct morphological structure, form a cohesive se-

mantic class designating entities, and always function syntactically as nominals. Confusion over their status seems to have arisen from several facts. First are certain resemblances in form between the prefixes on nouns and verbs. As has been seen, the two sets of prefixes are not actually identical in form, and they serve different functions. What makes the issue more interesting is the fact that in the Iroquoian languages, formal and functional criteria do not always yield the same classifications. Morphological verbs and particles may be used as names for entities and thus function semantically and syntactically as nominals.

It is important to recognise that none of the standard criteria yield vague results. A given verb may be polysemaous across its uses, functioning sometimes as a nominal and sometimes as a predicate, like akyå:të:nôhk 'we two are related'/my cousin'. There is no indeterminacy, however. Morphologically it is a verb in each instance, and it is accordingly subject to the special morphological restrictions unique to verbs, such as not being incorporable. Its syntactic function can be identified in context and has formal implications in such areas as pronominal choice, occurrence with enclitics, distributive choice, and participation in negative and identificalional constructions.

What may be graded is the degree of lexicalisation of specific forms. Some morphological verbs have been so fully lexicalised as nominals that speakers no longer use them as predicates and may even be unaware of their literal verbal meanings. Others are never used as nominals. Still others have two uses, one as a referential nominal, one as a predicate. Similarly, certain words that would qualify as particles on formal morphological grounds function as nominals semantically and syntactically. As long as classifications based on morphological form are kept distinct from those based on syntactic function, they remain unproblematic. The relationship between form and function is schematised in Figure 4.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>'just'</td>
<td>'racon'</td>
<td>'lard'</td>
<td>'my cousin'/we are related</td>
<td>'it is easy'</td>
</tr>
</tbody>
</table>

**Figure 4. Form and Function**
Numeratives in Mandarin Chinese

Robin Sackmann

1. Introduction*

The present essay is an attempt to determine the basic syntactic properties of so-called ‘numeratives’ as a specific class of items in the grammar of Mandarin Chinese. Based on the results of Sackmann (forthcoming b), a closely related paper concerned with the fundamental morphosyntactic status of numeratives, I will first examine the syntactic structure of numerative expressions (section 4). Next, I will try to determine the effects that numeratives have on the part-of-speech system of Mandarin Chinese (section 5). Finally, the relationship between an important subset of numeratives, the so-called ‘numeral classifiers’, and certain sets of substantives, the so-called ‘noun classes’, will be scrutinised (section 6).

The investigation that constitutes the main part of the present essay is based on a detailed empirical study of the grammatical behaviour of numeratives in Mandarin Chinese. Due to lack of space, this empirical basis must remain implicit here; only the basic facts about numerical expressions will be presented in section 2 in order to give the reader a general orientation. The examples given there will then be supplemented by additional data in the subsequent sections of the text as the need arises. A comprehensive account of phenomena related to numeratives and their constructions in Mandarin Chinese as well as an in-depth analysis of their syntactic and semantic properties, based on the study mentioned above, can be found in Sackmann (forthcoming a). That volume will also contain a full discussion of the relevant literature, which will be referred to only summarily in the present essay.

After the present Introduction, the essay is organized as follows.

Section 2 ("The problem: A short outline") informally introduces the distinction between classifiers and measures (2.1), makes some basic terminological points (2.2), and specifies basic problems (2.3).

Section 3 ("A short introduction to Integrational Syntax") characterises the general theoretical framework adopted in this essay, Integrational Linguistics (3.1), and the general syntactic theory developed in this framework, Integrational Syntax (3.2).