Levels of linguistic structure and the rate of change

Until recently, most studies of language change have necessarily treated one area of language at a time: phonology, grammar, or the lexicon. At present, however, we know relatively little about relationships between changes in different areas of language structure. We do know, for example, that certain types of vocabulary are more resistant to replacement than others, that certain morphological configurations are more susceptible to analogic leveling than others, and that certain combinations of syntactic rules are more stable than others, but we have as yet had little opportunity to compare functionally equivalent changes in different parts of the grammar.

Just such an opportunity exists among the Northern Iroquoian languages. Two sets of mechanisms interact pervasively throughout all levels of structure in all of these languages. One set reflects primarily the speaker's evaluation of the hearer's knowledge. Speakers exploit these mechanisms primarily to arrange information in such a way as to be most easily and readily understood. The other set, sometimes termed evidential, reflects the speaker's evaluation of his/her own knowledge, i.e., the reliability of the information communicated. Both types of distinctions, the assessment of hearers' and speakers' knowledge, are marked by syntactic, morphological, predicate, and particle devices in all of the Northern Iroquoian languages.

As can be seen from the diagram below, the nature of the genetic relationships among the Northern Iroquoian languages permits the reconstruction of five different stages in the development of the family: Proto-Northern-Iroquoian (PNI), Proto-Lake-Iroquoian (PLI), Proto-Inner-Iroquois (PII), proto-Western-Iroquois (PWI), and Proto-Eastern-Iroquois (PEI).

In the sections which follow, the development of grammatical and lexical epistemological devices will be traced through the five reconstructable stages, then compared.
1 Syntactic devices

In all of the Northern Iroquoian languages, grammatical relations within clauses are generally clear from pronominal prefixes on verbs. Word order is therefore not needed to distinguish case relationships. Instead, ordering can be exploited to arrange constituents according to their importance to the discourse. Constituents can be highlighted, or put into focus, by being moved to the beginning of sentences. Given or predictable information, that which the hearer is expected to share, and/or be less interested in, appears later. All of the languages share this device of ordering constituents according to the knowledge expected in the hearer, as can be seen in the sample sentences throughout the paper. Note that such focus fronting often yields arrangements quite unlike English, where a more usual ordering is given-new.

(1) Cayuga: \textit{Katsihwa' kiso:s .. To: ti'}
\textit{hammer I-seek How then}
\textit{nika:nó:' ne' katsihwa'?}
\textit{so-it-is-expensive the hammer}
'I am looking for a hammer . . . How much does this hammer cost?'

Another syntactic feature common to all of the Northern Iroquoian languages is an optional process of nominalization. All of the languages contain three morphological types of words: verbs, nouns, and particles. Morphological form does not necessarily match syntactic function, however. Since all verbs contain pronouns referring to their agents and/or patients, they can function as complete clauses in themselves. They can also function as syntac-
tically nominal constituents. The syntactic status of formal verbs is thus often superficially ambiguous.

(2) Seneca: *Honótk’a’té’  hatikě̱htsišʔó’q*
they-were numerous they-were-old
ta:  ne’  ke’š
and it was used-to

ne:kę’:  wa’o̱khi:’onye’  honótsy̱o:wi:
this they-taught-us  they-told

ne:ño:to:wa:š  ky̱q’ó’  waenqótowaetha’
the they-hunt  it-was-said they-went-hunting
‘A lot of old people would explain to us what
it was like when the hunters would go out
hunting’.

All of the modern languages contain an optional device for overtly marking nominalization, although, interestingly, the device is not cognate in all of them. In Tuscarora, an optional emphatic particle *ha’* can precede such clauses, marking them as arguments rather than predicates.

(3) Tuscarora: *Ṉṟwa’nṉuṟi̱̱̱hkhwek  ha’*
so-will-you-all-one another-love

neθwà’ṉṟtyáḵhv’
you-all-each-other-are-married
‘Love one another, you married couples’.

In the other languages, an optional particle *ne* (> Wyandot (n)de) can mark clauses as dependent arguments.

(4) Wyandot: *E:jaɾ’se’  eno:ndaʔ’  ská̱t*
they two are cousins their home one the-he-
dey̱mihae’  ka’dé’ca’
devours humans and-the-other
de:jaɾ’se’.
the-they-are cousins.
‘Two cousins, one of whom was a cannibal,
lived together’.

(5) Mohawk: *Yah  tha’yıe̱se̱shakownarà:ni  ne*
not  did-he-to-them-word-speak the
Although the Tuscarora particle is not cognate to those in the Lake languages, its nominalizing function is the same. The arrangement of propositions into predicates and arguments, that is, the choice of what is to be the main predication and what is to be nominal (usually identificational) constituents, is determined in large part by the speaker’s assessment of the shared knowledge of the hearer. New information is generally put into a main clause, while identifying or understood information is more likely to be presupposed and thus subordinate. Note the differences between the pairs of sentences below.

3a. You who are married should love one another.
3b. You who should love one another are married.

5a. The dead man did not say a word to his friends.
5b. The man who did not say a word to his friends was dead.

7a. They were chasing those who escaped.
7b. They escaped from those who were chasing them.

8a. The ones who were hunting went home.
8b. The ones who went home were hunting.

The languages exploit their nominalization processes in essentially the same way throughout the family.

A third syntactic device which enters into effective arrangement of infor-
mation is that of noun incorporation, whereby a noun stem referring to the
semantic patient of a predication may occur with a verb.

(9) T. nekaku'tiky:ko:ro:hrv
ne+kak+ku+tiky:ko:ro:hrv
DU-pl-them- mind - bother +STATIVE
‘they were depressed’

(10) W. ahànômajà'ko'
a+ha+nôma+tja'k+o'
PAST+he/it+ head + strike +PUNCTUAL
‘he hit her on the head’

(11) M. tyotenyëhto:ru
t+yô+te+nyëht+or+u
there+it+self+snow+cover+STATIVE
‘it was snow covered’

(12) Oe. loyâ'takëhte'
lo+yâ+t+keht+e'
he+ body +ô+ carry over the shoulders
+STATIVE
‘he was carrying a corpse over his shoulders’

(13) C. w'ënikà:nê:yój:t
w+ë'nike+h+t+niyo:t
it+ hoop +ô+ hang
‘the hoop hangs there’

(14) S. o'thatiyeqyen
o'+t+hâ+t+i+ye+qyet+ht
PAST+DU+masc+pl+ bag + slam +CAUSATIVE
‘they slammed the bags down’

The languages all share this device, although idiosyncratic restrictions on spe-
cific lexical items vary slightly from language to language. Some verbs must
incorporate, some cannot, and others appear both ways. Some noun stems
appear only incorporated, others never, and others both ways. Certain com-
binations yield unpredictable idiomatic meanings. Where there is a choice,
however, the choice is governed, again, by the individual importance of the
noun stem to the discourse. Focussed noun stems appear independently, unin-
corporated.

The Cayuga speaker opened a telephone conversation with the following
statement.
He closed it, after much discussion of the circumstances surrounding the mishap and possible solutions, with the request:

(16) C.  

Kyę:kwa’ ki’kyę:’ ęka:she:kę’  soku:’a,  
if just you-will-see-them someone  
ękasheho:wl’  she  qketkwęahto:’.  
you-will-tell-them how I-wallet-lost-have  
‘Anyway, if you should see anyone, tell them  
that I have lost my wallet’.

The speaker’s estimation of the knowledge and interest of the hearer, that is, of what is new, unexpected, and pertinent, is the main factor in incorporation. The process was clearly present in Proto-Northern Iroquoian and has changed very little in the modern languages.

Focus fronting, nominalization, and noun incorporation are, thus, three syntactic devices, shared by all of the Northern Iroquoian languages, which are triggered primarily by the speaker’s estimation of the knowledge of the hearer. New and/or controversial information is put into focus by equivalent means in each of the languages, and given, agreed upon, or predictable information is backgrounded by other equivalent devices across the languages.

2 Morphological devices

All of the Northern Iroquoian languages share a cognate tense-aspect system. Two of the tenses in particular distinguish the speaker’s certainty about a predication: the future and the optative. The future, PNI *ę (T. v, W. e, M., Oe. v) indicates that an event is certain to happen. The optative, PNI *a:/ *aŋ, indicates that an event might, should, could, or would occur. Compare the pairs of verbs below.

(17) T.  

vhratshu:ri’ ‘he will eat’  
ahratshu:ri’ ‘he might/should/would eat’

(18) W.  

e:ja:jų’ ‘he will kill you’  
auijų’ ‘he might kill you’
The future prefix also occurs with habitual events which are considered predictable because they happen so often or because they are the effect of a cause.

(23) T. vēhrāhrku’ ārūh vkhēyatkāhriθ
he-will-go-back if I-will-tell-him
he will go home if I tell him'  

(24) W. tehstot nadayēmeh eyō:nōht wā'ja’
you-will-return the-mine will-I-thee-give a-little
'If you go back, I will give you a little of mine'.  

(25) M. Awyhniserakwē:ku vkuṭihú:take’
all-day they-will-eat-grass
nā:ku ne kwā:ti
under the side
'All day long (the cows) would graze on the east side'.  

(26) M. Kvkwite’ssti’ akhsōtha vyahē:ru,
early-spring my-grandmother she-will-say
"O:nv yeyōhe’ a:hyati’tarakarhātho’’.
now it carries they should turn over clay
'In the early spring, my grandmother would say,
"It is now time to plow"'.  

(27) M. Toka’ vtēhsya’ke’ sanūhkwis
if you-will-cut your-hair
nó:ny  orákhwase’
the-when  moon-is-new

súha  yohsnó:re’  vsewaterhyá:ru’
more  it-is-fast  it-will-grow-back
‘If you cut your hair during the new moon,
it will grow back much faster’.

(28) C.  Kanqhskó  ekhné:sek  kyé:kwa’  eyustáqtih
house-in  we-will-stay  if  it-will-rain
‘We’ll stay indoors if it rains’.

(29) S.  Kanyо’  éwokatkanqño’he’to:  omé  wáxé
when  I will be rich  now  before
éké’sehta:ni:no’
I-will-car-buy
‘When I’m rich, I’ll buy a car’.

The optative is used with irrealis constructions.

(30) T.  Aríh  arkwatsú’khu:k  aknwhsá:tya’t.
if  I-would-be-rich  I-would-house-buy
‘If I were rich, I would buy a house’.

(31) M.  Toka’  a:yetshiwnard’u,  kati’  nú:wa’
if  you-would-address-  perhaps  maybe
a-word-to-her-have
a:yetshiyatera’swá:wi’
she-might-have-given-you-good-luck
‘If you had spoken to her, she might have
given you good luck’.

(32) C.  A:kate:khq:ní’  kyé:kwa’
I-would-eat  if
a:yokéhwangó:t
she-would-offer-it-to-me
‘I would eat if she offered me something’.

(33) S.  A:kokénówó’s  neh  á:ke’ha:ste:
I-would-help-you  when  I-would-be-strong
‘I would help you if I were strong’.
Another morpheme which reflects the speaker’s knowledge about the truth of a predication is the contrastive prefix, PNI *th-. It can indicate that an event or state is unexpected or contrary to normal procedure or fact. It replaces the optative in irrealis states.

(34) T. thaka'nyë:rvh  ayyuté:nv:'
I-would-do-so it-would-be-sunny
‘I wish it were sunny’.

(35) C.  I: a:kéfró:ni’ kye:kwá’ tha'ak’yatahni:yóh
I I-would-build if my-body-were strong
‘I would build it if I were strong’.

(36) S. Tha’a:kta:ni’ a:ke’séhta:ni:nó’ náe:
I-were-rich I-would-car-buy emphatic
‘If I were rich, I would buy a car’.

(37) M. (What are we going to do about this hole in the pipe?)
Thykkohó:roke’
‘I’ll just plug it up. (contrary to all you might expect me to go through, like calling a plumber or replacing the pipe)’
Thykkohó:
‘It will just leak. (contrary to your expectation that it will be fixed)’

The contrastive is also used to hedge the degree of truth. In Cayuga, it cooccurs with the diminutive -hah/-'ah in this function.

(38) M. tsi ne thihá’shá’tse’ ‘he is sort of strong’
(ra’shá’tse’ ‘he is strong’)

(39) M. tsi ne thihahní:yes ‘he is sort of tall’
(rahni:yes ‘he is tall’)

(40) C. thihaks’ako:wáhah ‘he is sort of handsome’
(haks’a’kó:wáh ‘he is handsome’)

(41) C. thihá’sá’tse:‘ah ‘he is sort of strong’
(ha’sá’tse’ ‘he is strong’)

(42) C. thihawaychó:hah ‘he is sort of good at it’
(hawáyó’chó: ‘he knows how’)

(43) C. hókwe’tiætké:‘ah ‘he is a little mean’
(hókwe’tiætké’ ‘he is mean’)

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Finally, the plural suffix -shq'eh, which is cognate within the Inner languages, is exploited in one of them, Cayuga, to hedge numbers.

The morphological markers which qualify the knowledge of speaker and hearer have remained stable in form and relatively stable in function across all of the languages. The future and optative tenses, which indicate the degree of certainty on the part of the speaker about coming events, have remained unchanged. The contrastive, which indicates the relation of the information to the hearer’s knowledge and thus expectation, has also remained unchanged. Mohawk and Cayuga further exploit the contrastive as a qualifier of the degree of truth of the predication. Another Proto-Northern-Iroquoian morpheme has been extended in the Western languages to qualify the degree of truth: Cayuga and Seneca use the diminutive as a hedge, ‘a little’. Finally the pluralizer, cognate among the Inner languages, has been extended semantically in Cayuga to hedge numbers.

3 Predicates

By far the richest sets of evidential devices are lexical. One group of lexical evidentials consists of overt predicates which specify the source or reliability of the information communicated.

(48) T.  Kyen:ih  u:’y  vθaka’θyə:’a’t
I-think  other I-will-hang-again
‘I think I’ll hang another drape’.

(49) T.  V’nehú:’nv  hé:snv:  wehrvh:weh
it-proved-it  this  it-is-true
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hè:nî:kv: tyuyè:rvh
that so-it-happened
'This proved that it had truly happened'.

(50) W.
Tiwà:yé:'a' a'yè'hao'
much-likely she-said
de hudù'mè' daq' nó': yawáh'tsih
the his-mother perhaps it-is-good
'His mother said that it was likely that it would be good'.

(51) W.
Yatù:yìh tè' unò'tò: 'ndì'
it-is-certain not to-her-is-it-long
'She certainly did not find it long'.

(52) W.
Iréhe' ca'awà'tat da:unò:ò'ë'
he-thought they-were-same the-bear
'He thought he was a bear'.

(53) W.
Kari:wáqht esomá'turè:ha'
matter-is-sure he-will-find-us
'He is sure to find us'.

(54) W.
Ude'kwa' kahè tò:nu: di' ahukwe'ndihahtë'
very much there greatly she-him-scolded
'She scolded him very badly'.

(55) M.
Khè:tv kv tà:'a tehay:ky'a'ks
I-think this maybe he-is-chopping-wood
'I believe he is out chopping wood'.

(56) M.
Tkayé:ri nahò:tv we'è:ru
it-is-correct what she-said
'What she said is correct'.

(57) M.
Tsì ni:yot tsì yukhihrò:ri yáh
so so-it-is that we-are-told not
úhka' ne wê:tu
anyone the ever
teyotú:'u a:yakothò:ri' ne oh
it-happens they-would-tell the what
nihaya'tò:tv'
so-his-kind of body-is
'And so, we are told, no one was ever able to
tell what kind of body he had'.

(58) M. Wë:ne' ki' wāhe' tsi vske'sà:nì'
it-is-evident of course that you-will-beat-me
'It is evident that you will get the best of me'.

(59) Oe. Wë:ne' wi: ni: jì' vske'shì:yì:hi
it-is-evident very so you-will-beat-me
'it is evident that you will get the best of me'.

(60) Oe. ... wahi:lu ne'n ohkwà:li
he-said the-one bear

... "kwàh oihwi:yò:
just thing-good
jì' yukhi'shñynù:ne'
that they-will-beat-us
'... The bear said, "It is a sure thing that we're
going to get cleaned up"'.

(61) Oe. Ta: tkaye:li: thò yahá:yùhwe
and it-is-true there there-sho-arived
'And, in fact, she did arrive there'.

(62) C. Kò:tò 'ò hne:' takwaà kye'trå'
I-mean inf this this-side there-she-lives
'I suppose it is the lady over there'.

(63) C. Ne:' ne' tkài:' ne:'kyé honòhtò
this the it-is-correct this he-knows
'It is true that he knows'.

(64) C. Akenòtò shè honihèh
I-know how he-borrowed-it
'I know that he borrowed it'.

(65) C. Tka:kò:t hne:' têthá:yè'
it-is-certain this he-will-bring-it-back
'He is certain to bring it back'.

(66) C. Thihè:nè:' tshò:j n'ethò ò niyàw'éqò
they-assume just the there so-it-fell
"They just assume that this is the way it happened."

67) C. Tekekane': a:yé' onahtokehke'yé' I-am-looking it-seems they-are-growing kayéthwashho' they are planted 'I see your plants are growing'.

68) C. Hëna:tq monihëh they-say he-borrowed-it 'They say he borrowed it'.

69) S. Okwe:nyó' naë'kwá e:yaéntkë:ni' it-is-possible just-really I-will-beat-him 'I just might beat him'.

70) S. Ha:wë: ëthe' he-said he-will-come 'He said he would come'.

71) S. Akenóhtö' ëthe' I-know he-will-come 'I know he is coming'.

A majority of these evidential predicates ('think', 'say', 'tell', 'certain', 'true', etc.) are cognate across the languages. As throughout the rest of the lexicon, the most closely related languages share the most cognates, the most distantly related languages slightly fewer.

4 Particles

Another type of lexical device which can modify the speaker's and hearer's knowledge consists of particles, morphologically unanalyzable words usually consisting of only one or two syllables. Such particles can indicate the speaker's assessment of the reliability of information presented, marking its source (hearsay, appearance, deduction), its probability (certain, probable, possible), its degree of truth or appropriateness (exactly, sort of, slightly). They can also indicate its correspondence or contrast with the hearer's expectations (indeed, you know, sure enough, surprisingly).

In Tuscarora discourse, such particles are conspicuously rarer than in the other languages. Some indicate the probability of an event, others the degree of truth. Some serve both functions.
Kweti' v'nyuríyih atsi'áh
maybe it-will-boil a-little

arv̑h tetsi̱hv̑ ahsihrv̑:
about maybe you-would-say

25

tiwarístá:kye:
so-metal-numbers

'Perhaps you'd say about 25 minutes'.

arv̑h hó'iahk tiwakw̑vstrá:kye:
about four so-pounds-number

'About four pounds'.

Arv̑h há'ne' úhyák tiwakw̑vtsrá:kye:
about about six so-pounds-number
tiwahwisné'
so-it-is-heavy

'It weighs around about six pounds'.

Yahwahí'ni' u'tésnakw ha' kí
there-she-threw-is behind the right

thru'na'nihrv̑
there-he-was-standing

'She threw it right back where he was standing'.

Wyandot also seems to have had relatively few such particles in comparison with the rest of the family. Since all of our knowledge comes from texts recorded longhand, a process which often serves to eliminate particles as speakers slow down and transcribers speed up, we can only speculate on their frequency. An experiential particle a:ye' indicates that the source of the evidence is observation.

de ya'guyomé à:ye' uskú'taye'
the it-was-bloody it-appears its-head-on

'His head looked bloody'.

A'atii̱h tehátáka dà:yè' dahsté'
not-it-looks he-talks as if that

ta'úh hu'diyocháčé
something 'his-mind-is-troubled'

'He remained silent. He seemed to be troubled'.

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(79) W.  
\[ Në \ ha:\rot \ da:yè' \ du \ tà:yuwâskaq'te \]
now he-hears it-seems that someone-is-walking
'It sounds as if someone is walking around'.

An inferential particle \( nq' \): indicates that the source of information is a deduction from the evidence available.

(80) W.  
(some hunters have just found some large, unusual claw marks on a tree.)
\[ Tq'a \ nq': \ te'yawahstri \ de': kwakâ:jato' \]
no maybe not-is-it-safe that we-trouble-it
‘Maybe we had better not disturb it’.

(81) W.  
(A friend has just informed the speaker that horses do not hatch, but rather bring forth their young.)
\[ Në \ tu \ i'hsè \ ne \ nq': \ ahaye'diyôha'te' \]
now there sure the inf he-cheated-me
‘Then he must have cheated me! (when I bought the horse egg)’

Other particles indicate the probability of the proposition.

(82) W.  
\[ Në \ skå' \ etsikwaté'wah \]
now surely we-will-again-run-away
‘Now, surely, must we run away again’.

(83) W.  
\[ Eja:ju' \ skamëntáh \]
he-will-kill-you must-be
\[ ska'mënta'ska \ eja:ju' \]
must-be-sure he-will-kill-you
‘He is sure to kill you’.

(84) W.  
\[ Në \ hì \ a'yatene'n'hîhçè \ a:rijù' \]
now surely I-have-accomplished I-killed-it
‘Now I have surely killed it’.

Some indicate the degree to which the assertion is true or category assignment appropriate.

(85) W.  
\[ Dë \ kwa \ wà'tanësti \]
greatly she-is-small-and-pretty
‘She is really small and pretty’.
(86) W. \( Daq' \) \( kahq' \) \( keahtlhcahs \)
that really I-seek-it
'That is really what I am looking for'.

(87) W. \( Ke' \) \( e'n\-di' \) \( ah\-tome' \)
very much he-is-tired
'He is very tired'.

(88) W. \( C\-d\-dar \) \( ne' \) \( ah\-teugad\-i' \) \( te'sk\-e'n\-e' \)
really now not-long not-it-lapses
'Very little time passed . . . . '

(89) W. \( Ne' \) \( kusk\-e'n\-e' \) \( eha'de'\-ega'de' \)
now almost he/her overtakes
'He almost caught her'.

Another particle contrasts the proposition with expectation.

(90) W. \( Hak\-\-tra' \) \( ih\-ci' \) \( hu'diy\-\-nuw\-a'n\-e' \)
he-ventures it-is-so his-mind-is-great

Mohawk speakers tend to make more frequent use of evidential particles in discourse than Tuscarora and Wyandot speakers, although there is considerable variation among Mohawks themselves. The particles distinguish both source and reliability of information, which are, of course, closely related.

One frequently occurring particle, both in conversation and in story telling, is a quotative particle, \( ya':kv' \), which indicates that the speaker does not take full responsibility for the information.

\( ya':kv' \) 'it is said'

(91) M. \( Wa'ioh\-\-vi'reht\-e' \) \( ya':kv' \)
he-burst-out-laughing it-is-said

\( ki':kv' \) \( rake'n\-niha \)
this he-is-father-to-me
'They say my father burst out laughing'.

(92) M. \( K\-ri'\-ku \) \( thati'\-ter\-u'tahk\-we' \)
woods-in there-they-used-to-live

\( ya':kv' \) \( ki':kv' \) \( kah\-w\-a'tsire' \)
it-is-said this it-family
'It seems there used to be a family which lived in the forest'.

Other particles are inferential. The information communicated is considered a reasonable deduction but not necessarily established fact. In 92, the speaker infers the bridge between remembered events. (Since they are particles, they do not contain pronouns.)

\[ki'ná:'a\] ‘I guess’

(93) M. \[Ne kí' ki:kv Ahkwesahshró:nu:] the just this St.-Regis-resident
\[thé:nyu\] ki ná:'a
something I-guess
\[yahori'wanú:tohse' autahó:yu'] ne
he-asked-for he-would-give-him the
\[rahu:tsi\]
he-is-black
‘I guess the St. Regis man must have asked the Black fellow to hand him something’.

The inference may be based on observation.

\[ta'/ta:'a\] ‘I suppose’ (I have deduced the possibility)

(94) M. \[Oskvmí:tu ta' yotohétstu\] deer possibly it-has-passed
‘A deer must have passed by here’. (I see tracks.)

(95) M. \[Khé:ryu kv tá:'a oskvnu:tu o'wà:ru\] I believe that possibly deer meat
\[ítewake' vyd:karahwe'\]
we will eat it-will-evening-be
‘I think we must be having venison tonight’. (I smelled it as we walked in.)

(96) M. \[Khé:ryu kv tá:'a tehayíkya'ks\] I-think this possibly he-is-chopping-wood
‘He must be chopping wood’. (He usually chops wood at this hour, and he is not here.)

Other particles indicate the degree of certainty on the part of the speaker.

\[to:ske'\] ‘truly’

(97) M. \[Ki:kv oká:ra' nè:ne to:ske kwáh e' thó\] this it-story which truly really there
niyawì:'v
so-it-happened
'This is a true story'.

(98) M. O:nì tò:ske tsi tehohinikuhrhi:u
now so truly that their-minds-were-broken
'Now they were truly desperate'.

(99) M. Rawé:ras úhte' thì:kv rò:ne'
he-thunders perhaps that his-wife
wa'etshì:kv'
you-saw-her
'Perhaps you saw the Thunderer's wife'.

(100) M. Tá:ni'ks úhte' tho yà:yyv
might-as-well perhaps there there-she-should-go
'Well, maybe she should go'.

toka''maybe'

(101) M. tòka' yà:ya'k yawì:re'
maybe sixteen
sha'tewakosiyà:ku
as-I-winters-had-crossed
'When I was about sixteen years old...'

(102) M. Toka' o:nì ki' ne okú:kwara
maybe now just the O Face
shakoyenáhseré'
he-is-going-to-catch-her
'O Face might just catch her'.

tó:wa' 'maybe'

(103) M. Tsyahyà:ksheka tò:wa' vtòhetste' ki:kv
one-week maybe it-passed this
'About one week went by'.

nu:wa' 'maybe'

(104) M. Kati' nù:wa' a:yetshyatera'swà:wi'
perhaps maybe she-might-have-given-you-luck
'She might have given you good luck'.

(98) M. O:nì tò:ske tsi tehohinikuhrhi:u
now so truly that their-minds-were-broken
'Now they were truly desperate'.

(99) M. Rawé:ras úhte' thì:kv rò:ne'
he-thunders perhaps that his-wife
wa'etshì:kv'
you-saw-her
'Perhaps you saw the Thunderer's wife'.

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one-week maybe it-passed this
'About one week went by'.

nu:wa' 'maybe'

(104) M. Kati' nù:wa' a:yetshyatera'swà:wi'
perhaps maybe she-might-have-given-you-luck
'She might have given you good luck'.
Levels of linguistic structure and the rate of change

kati' 'perhaps' 

(105) M. Khè:rv kati' kv nekwá:
   I-think perhaps there side
   yà:ke'
   I-might-go-there
   'I might just as well go over there'.

(106) M. Kati’ né wa'è:ru
   perhaps that she-said
   'Is that what she said?'

Some emphatic particles indicate greater commitment or certainty. The speaker is willing to take responsibility for greater intensity or precision.

kwah 'really, just, very'

(107) M. Ka'nyuhsákta nù:we nvhatikwè:tarv'
   near-the-nose place where-they-will-cut
   kwáh se's
   just then
   yà:kv' nè:ne a:yohnatirúthake'
   it-is-said which it-would-be-like-rubber
   'Near the nose, they say, is a place which is just like rubber'.

(108) M. Kwáh i:kv tsi rotháhes
   really it-is that their-road-is-long
   'Their road was truly long'.

ki' emphatic, 'just'

(109) M. E' thó ki' na'á:wv'ne'
   there just so-it-happened
   'And that is just what happened'.

(110) M. Ny ki' vkahtí:ti'
   now just I-will-go
   'Now, I think, I'll just start out'.

Some particles point out the correspondence of the truth with expectation.

(111) M. Tò:ske
   'It sure is'. (as response to a tag, such as “It’s nice, isn’t it”)
wáhe'/wáhi' ‘really, in fact, sure enough’

(112) M. O:nv wáhi' wa wa'utkáhtho' ne rawhé:yu then in fact she she-saw the he-is-dead ‘Then in fact she did look at the dead man’.

(113) M. Ne ken wáhe' wa'è:ru' the ? indeed she-said ‘Is that what she said’?

(114) M. Nyo: ki'wáhe' suke'nikúhrh v gosh in fact I forgot ‘Oh gosh, as a matter of fact, I forgot about it’.

Oneida speakers use largely the same set of evidential particles as Mohawk speakers. The quotative particle is the same. A quotative particle is quite frequent.

(115) Oe. Okhna' yákv' wi: w a wa'thatawóli', and-so they-say he-travelled-around ‘And, so they say, he travelled around’.

(116) Oe. Wahawísakahv:tú yákv' thikv he-ice-made-hole they-say that skyhnáksv; nv one-it-skin-bad now yákv' thikv ohkwá:li tho they-say that bear there yahanitáhsowe away-he-put-his-tail ‘He made a hole in the ice, they say that fox did; and they say that bear put his tail in the water’.

(117) Oe. Khale' onv uhne wahv:lu' skyhnáksv, and now it-seems he-said one-it-skin-bad “Tutahsanítskwak...” ‘jump-up’ ‘Finally said the fox, it seems, “jump up now”.

(118) Oe. Nv uhne lotnuhti:tu ka'ikv now it-seems he-wait this
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skvhnâksv kwatokvu
one-is-skin-bad really

akwai:sâtvste hvtdkne
it-would-ice-become-thick
‘And so it seems the fox waited for the ice to become really thick’.

Some particles specify the probability of the information.

this just perhaps I-shall-climb tree-on
‘I guess I will climb this tree here’.

(120) Oe. Ta:t núwa’ ne: tyoyânie’
perhaps maybe that it-is-good
‘Maybe it would be best’.

(121) Oe. Ny kati’ vktatâhsawv’ vkahtahki:ni:
now maybe I-will-begin I-will-shoe-make
‘Now, I guess, I’ll start to make some shoes’.

Some particles specify the degree of truth or appropriateness.

(122) Oe. Ny se’ kwah kv’ nihv:nâhse:
now just really so they-are-large
‘Now they are quite big’.

(123) Oe. Kwah ok tho thahalâthv’
just only there he-climbed-there
‘He just climbed right up’.

not possible just could-she-go-to-sleep
‘She just could not go to sleep’.

(125) Oe. Yah se’ tha:ye:kiwe:ni:
not just could-she-tell
‘She just could not tell’.

Some particles indicate that not only is the statement true, but either in accord with expectation or in contrast.

(126) Oe. to:kvâste’
‘yes, that is true’ (in response to a tag, such as ‘isn’t it’?)
Cayuga speakers draw from an extremely rich repertoire of evidential particles. A quotative particle distinguishes hearsay, as in Mohawk and Oneida, although it is not cognate.

\textit{ake}’ ‘they-say’

\begin{verbatim}
(130) C. Ako\-no\-hyá’k ake
she-got-hurt it-is-said
‘I heard that she got hurt’.
\end{verbatim}

\begin{verbatim}
(131) C. Thay\-ë\-kya’khóhá’ ake
he-went-to-chop-wood it-is-said
‘They say he went to chop wood’.
\end{verbatim}

An experiential particle indicates that one saw, tasted, smelled, etc. the evidence.

\textit{a:ye:’} ‘it appears’

\begin{verbatim}
(132) C. A:ye’ wahe’ qotshój: oto\-kótó
it-appears just seems it-passed
tewáhohté:š
two-ears-are-long
‘A deer must have just passed by here’. (I see
the tracks.)
\end{verbatim}

\begin{verbatim}
(133) C. A:ye’ tewáhohté:š o
it-appears two-ears-are-long perhaps
ètwá:wéa:k
we-will-eat
‘We must be having venison for supper’. (I can
smell it.)
\end{verbatim}
An inferential particle, 'q, indicates that the information is a tentative conclusion deduced from the evidence available.

(135) C.  
\[ T\hbox{\textit{tha}:y\hbox{\textit{e}}}: \quad q \quad h\hbox{\textit{n}\hbox{\textit{e}}}:' \]  
he-will-bring-it-back I-guess this 'He'll bring it back, I guess'.

(137) C.  
\[ T\hbox{\textit{hi}\hbox{\textit{h\hbox{\textit{e}}}:n\hbox{\textit{e}}}: \quad 'i\hbox{\textit{s}\hbox{\textit{h}}}:o \quad n'\hbox{\textit{e}\hbox{\textit{th\hbox{\textit{o}}}:'}} \]  
contr-they-think only the-there
\[ q \quad n\hbox{\textit{iy\hbox{\textit{aw}}':q\hbox{\textit{oh}}'} } \]  
guess so-it-fell 'They assume that that is how it must have happened'.

Some specify the probability of the proposition.

(138) C.  
\[ T\hbox{\textit{tha}:y\hbox{\textit{e}}}: \quad k'\hbox{\textit{i\hbox{\textit{s\hbox{\textit{he}}}}:}} \]  
he-will-bring-it-back perhaps 'He might bring it back'.

(139) C.  
\[ T\hbox{\textit{he}}: \quad k'\hbox{\textit{ish\hbox{\textit{e}}}} \quad h\hbox{\textit{w\hbox{\textit{a}}}} \quad t'\hbox{\textit{a}}:q \]  
not perhaps contr possible taqth\hbox{\textit{h\hbox{\textit{a}}}:y\hbox{\textit{e}}}:'  
not-he-would-bring-it-back 'He might not bring it back'.

(140) C.  
\[ K\hbox{\textit{ye}:kw\hbox{\textit{a}}}: \quad h\hbox{\textit{n\hbox{\textit{e}}}:} \quad h\hbox{\textit{w\hbox{\textit{a}}}} \quad t\hbox{\textit{e\hbox{\textit{th\hbox{\textit{a}}}:y\hbox{\textit{e}}}}:'} \]  
maybe contr this he-will-bring-it-back 'He might bring it back'.

Others indicate the degree to which the proposition is true or category assignment appropriate.
(141) C. Kwahs wahe' tshó: akaky'ataháesí' really now only I-body-wash-finished 'I just now finished taking a bath'.

(142) C. The' kwáhs t'eqkhniwayení̱ t'ao' not really we-two-did-not-finish 'We didn’t quite finish'.

(143) C. The' kwáhs qí:we t'ekqyetéi: not just really not-do-I-know-you 'I don’t really know you'.

(144) C. The' akwáhs tho ni:yo: not really there so-much t'eqakhwistáq' not-do-I-have-money 'No, I don’t have quite enough money'.

(145) C. O:né hne: tho:ha hékahé: now this there-dim there-will-I-take ṇkyahté:ti' we-two-will-leave 'It is almost time for us to leave'.

(146) C. Tatsihi' ke:s tshó: short-time customarily just i:só' atkhehtowé:nye: much I-stir-field 'In just a little while I can work up the dirt' (plough).

Some evidentials indicate that the proposition is both true and either in accord with or contrary to expectation.

(147) C. To:kéhs kyé: né:kyé a'éyetho' in-fact this this she-planted 'And, in fact, this is what she planted'. (as predicted)

(148) C. To:kéhs a'akowi:yáeta' in-fact she-had-a-baby 'And indeed she did have a baby'.
Seneca speakers exploit a wide variety of evidentials with great frequency in all types of discourse. A quotative particle indicates that the evidence is hearsay. It is especially frequent in legends and other tales.

(149) C.  
Aọstaːrt  nóneː'  
it-rained  in-fact  
‘It did too rain’. (contrary to what you said)  

(150) C.  
Tewakatohwetsoːni  nóneː'  
I-want  
‘I do too want some’.  

(151) C.  
The'  kyçeː'  nóneː'  niː'  kwa'yó̂  t'eːkçeː  
not this  you-know  I rabbit  not-is-it  
‘I’m no rabbit, you know’. (so stop trying to  
feed me lettuce, as if you thought I were)  

(152) C.  
Kenhohfrogha'  sé'  
I-pile-it-up  
‘I am piling it up’. (so your command was  
unnecessary)  

(153) S.  
Sqːkáː'  kyòːq  teːniksaː'  hotiya'tahto'q  
someone  they-say  two-children  they-are-lost  
soːte'.  Berrino  kyòːq  hiya:sòh  Chickchick  
last-night.  they-say  their-names  
kyòːq  koks'ta'shòː'qòh  
they-say  her-children  
‘I heard that two kids were lost last night.  
Berrino I guess their names were. Must be  
Chickchick’s children’. (from a conversation)  

(154) S.  
Taː  oːné  naː:  kyòːq  se  nq'otːa  oːné  
and  then  really  they-say  3  so-days  then  
kyòːq  waːyô̂  nê  hòːkweh  
they-say  he-arrived  the  man  
‘And then, it seems, after about three days, it  
seems, a man appeared’. (from a legend)
An experiential particle, a:yę:’ indicates that the evidence is appearance.

(155) S. A:yę:’ te’o:yai ne kæ:ne’ ahsəh
it-appears it-is-not-ripe the cherry yet
‘The cherries don’t look ripe yet’.

It is sometimes used somewhat as a quotative or inferential (not unlike English ‘it seems’ or ‘it appears’).

(156) S. Ta: o:nę nə: kyo’q ne haksə’tase:’a
and then really they-say the he-is-a-new-child
wac’ kyo’q a:yę:’, “Waeyajəgsko:’”
he-said they-say it-seems I-got-the-best-of-him
‘Now, then, it seems, the young man said, “I got the best of him”’.

(157) S. “Tota:eyö’ shə: a:yę:’ kwa i:’
I-should-give- really it-seems really us
a:yəkwaya’take’ha’
it-should-help-us it-back-to-him
‘It looks like it would help us for me to give it back to him’.

The inferential particle nq appears to be cognate to the Wyandot nq:.

(158) S. Nq: te’o:yai ne kæ:ne’
I-guess not-it-is-ripe the cherry
‘The cherries must not be ripe’ (because the strawberries are still out).

(159) S. A:yę:’ ni: i:wi: hotko’ nq:, æ:htə’k
it-seems I I-think wizard I-guess too-much
hə:te:yö: haye:te:ih
different things he-knows
‘He seems to be some kind of a wizard; he knows too much’.

Some particles indicate the degree of precision, truth, or appropriateness.

(160) S. Nə:’ kwa hi:kə: hoyə’tasha:yę:’
just really this his-body-was-slow
‘He was really moving very slowly’.
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(161) S. Akwás ne' hoh niyáweq'oh really that so-it-happened 'This is how it really happened'.

(162) S. "Sè:nò shò:h kyo'q waq', 'ta'a:q don't just they-say he-said not-could a:yokhnì:nya:k".
we-two-should-marry 'We certainly cannot get married", he said'.

(163) S. "Hetsheyà shò:h".
you-will-take-her-back just 'You just take her right back'.

(164) S. O:nè tho:há ekaniya:yè'
now there-dim it-will-snow 'It was about to snow'.

Other evidential particles indicate not only the reliability of statements but also expectation concerning their truth.

(165) S. To:kès akeköwe:nyō: eyøy:kè's it-is-certain it-is-possible-for-me I-will-find-
ne yeksá'ko:wa:h the she-child-large
for-you 'Yes, I will certainly be able to find a beautiful
the she-child-large
girl for you' (as you suggested).

(166) S. Ta: o:nè nae: kyo'q to:kès
and then really they-say it-is-certain
sa:htè:ti'
he-went-back
skëno'q kyo'q hatha:ine'
slowly they-say he-follows-the-path
slowly 'Then indeed, he made his way back slowly'.

Due to their brevity, tracing the source of particles can be only highly speculative. A comparison of evidentials across languages, however, indicates that the particles mirror most dramatically the varying degrees of genetic relationship among the languages in the family. Only one particle, the ky' of Tuscarora and Wyandot, appears remotely possibly traceable to Proto-Northern-Iroquoian, and in this case the sound correspondence is not regular. (*k > Ø/ # -V in Wyandot).
A few particles can perhaps be traced to Proto-Lake-Iroquoian: possibly
the experiential W. a:ye'/S. a:yaq', the inferential W. no'/S. no',
perhaps /C. q'/M. (ki') na', the emphatic W., S., C., Oe., M. kwah(s). Again,
the sound correspondences are not regular, since *y > ɛ/V - V and *k > ɔ/
#_wV in Wyandot.

More particles can be attributed to Proto-Inner-Iroquois. Not only the
experiential, inferential, and emphatic particles cited above, but also the
quotative C. akq'/M., Oe. ya:kv' and the certainty of expectation S., C.
to:k'ehs/ Oe. tó:kvške'/M. tó:sk'eh and S. wai/Oe., M. wáhe'/wáhi'. The Western
languages share additionally the qualifiers tho:ha and S. shq:/C. tshq:
. The Eastern languages, the most closely related, share additionally the
probability markers úh'te', má:wa', and káti' and the precision marker ki'. (The
cognate marker in Cayuga has developed a slightly different function). Each
of the languages does contain unique evidential particles which appear in
none of the others, however.

The relatively rapid historical change which yields this distribution of par-
ticles in the modern languages can be observed in operation in the modern
languages in a number of cases. Different clusters of two or more particles
have often taken on various idiomatic senses which vary from one language
to the next. Languages with different internal and external sandhi rules show
wavering treatment of such clusters. In Cayuga, for example, glottal stops
metathesize to the left in all odd-numbered syllables except final ones. A
monosyllabic particle like ki', for example, retains its glottal stop word-
finally because the first syllable is also the last. When combined with she,
however, the particle retains its individual form in slow speech but exhibits
metathesis in fast speech: k'tishq' 'perhaps'. Speakers are unsure of word
boundaries in such clusters, although they tend to feel strong bonds between
the elements and favor joining them in writing. Equivalent ambivalent status
of incipient clusters is apparent in the other languages as well. In a number of
cases, clitic particles such as Cayuga tshq: ('just') and q ('presumably') appear
to be becoming ever more closely bound phonologically to the predicates
they modify, pointing toward incipient morphologization.

At the same time, all of the languages exhibit synchronic loss of syllables
from verbs to form particles and from disyllabic particles to form monosyl-
labic ones. In some cases speakers are aware of both long and short forms,
while in others, speakers are no longer aware of the longer ones. Such a loss
can be seen in the set W. yati:yaq 'it is certain', S. to:kaš, C. tó:kašs, Oe.
to:kvške', M. tó:sk'eh 'in fact', 'indeed'. The Inner languages have lost the
nominal prefix *ka- (W. ya-) and aspect markers from the verb based on the
root -tokə- 'certain', yielding unanalyzable particles. (The root remains other-
wise in -tokehti 'holy').
The frequent combination of evidential particles into long strings suggests that they must perform a function beyond simply specifying the degree of reliability of an utterance, which could often be neatly accomplished with a single, well-chosen verb or particle. People credited with reputations as eloquent speakers tend to use more such particles more frequently than less admired speakers. There is enormous speaker variation in the choice and frequency of use of them. Furthermore, the particles seem in some ways to have less salience to speakers. If a speaker slows down for clarity or dictation, or writes out a text longhand, the particles tend to disappear. Teachers tend to omit them when teaching these languages to children or adults whose first language is English. Speakers are almost uniformly at a loss to translate them.

The distribution of these particles in discourse is also quite interesting. As might be expected, they tend to cluster around specific statements which speakers would like to hedge, such as direct quotations or measurements. They tend to occur in very long strings particularly before shifts in topic or around elements of high communicative value to the discourse. Their effect on the rhythm of information transmission is striking; they allow the speaker time to collect thoughts at moments of the greatest choice. In addition to facilitating the performance of the speaker, they contribute to the effectiveness of the communication. They allow the speaker to regulate the flow of information so as to be most easily and readily understood by the hearer. If too many short, highly important units of information were to occur in rapid succession, a hearer might not be able to take them in all at once with their proper force. Strings of particles permit the speaker to arrange important information such that it arrives at proper intervals.

In addition to making it easier for the hearer to take in information, proper rhythm can affect the hearer’s willingness to listen. Plunging into a sentence can be considered brusque. The particles can soften the force of a communication. Consider the utterance below.

(169) Mohawk  *Khë:rvi kati’ kv nekwá: yà:ke’*
I-think I-might there side there-will-I-go
‘Well, I might as well go on over there, I think.’

The first two words are optional as far as propositional content goes. Speakers report, however, that if the particle *kati’* were removed, the sentence would indicate disgust and dissatisfaction.

Now in most cases, strings of evidential particles tend to be mixed with deictic particles. The deictic particles occur, in fact, much more frequently than is necessary to keep reference straight. Interestingly, Tuscarora, which exhibits fewer and rarer evidential particles than the other languages, exhibits correspondingly more deictic particles in discourse.
The deictic particles in all of the languages have the same secondary effect as the evidential particles. They allow the speaker to adjust the flow of information so that the hearer can process it most effectively in terms of the information he or she already possesses.

4 The comparative diachronic behavior of syntax, morphology, predicates, and particles

A comparison of these two, interrelated sets of devices across related languages does, in fact, yield insight into the relative stability of functionally similar mechanisms on different levels of linguistic structure.

One set of devices, triggered by the speaker's assessment of the hearer's knowledge in large part, contains syntactic rules (constituent ordering, nominalization, and noun incorporation), a morphological marker (the contrastive prefix), and lexical items of low salience, which allow the speaker to regulate the flow of information. These have changed at quite different rates in the Northern Iroquoian languages. While the syntactic rules and the morphological marker have remained stable, the lexical items have not.

The second set of devices, triggered primarily by the speaker's assessment of his or her own knowledge (the reliability of the information presented), exhibit exactly the same pattern. The morphological tense markers which indicate the probability of a proposed event, have remained completely unchanged in all of the languages. This is not surprising, since they are part of a closed, obligatory set. The contrastive prefix has remained formally stable in all of the languages, but has an added hedging function in Mohawk and Cayuga. The diminutive and plural suffixes can be traced to Proto- Inner-Iroquois, but they carry special hedging functions in the Western languages. Lexical evidentials have been much less stable. While many evidential verbs have been retained, such as PNI *-ihrq 'say' and PNI *-ehr 'think', 'believe', many others have been replaced. Evidential particles have been espe-
cially volatile. Tuscarora shares almost none with the Lake languages. Wyandot shares few with the Inner languages. Cayuga and Seneca, which are relatively closely related, share perhaps half of their particles. Even their quotatives and inferentials are different. Mohawk and Oneida, which are quite closely related, share most evidentials, although even here there are some differences. The same hierarchy of stability is apparent in this set of devices as in the other. Grammar is more stable than the lexicon. With grammar, syntax is functionally more stable than morphology, and within the lexicon, predicates are more stable than particles.

The resulting hierarchy of stability of functionally comparable but formally different devices in these two interlocking domain is, then, as follows, arranged in order of increasing volatility from left to right.

syntax ————> morphology ————> predicates ————> particles

Notes

1. I am grateful to Wallace Chafe and Hanni Woodbury for many helpful comments on this paper.
2. For clarity, this diagram shows only those languages considered in this paper. Another Five Nations language, Onondaga, is well documented, but, because of its relationship to the other languages, its inclusion here would not contribute to the argument made. Other Northern Iroquoian languages, Susquehannock, Huron, Erie, Wenro, Petun, Neutral, and Nottoway, are not sufficiently well documented to shed light on the issues considered here.

Wallace Chafe and Michael Foster (1981), have proposed that the actual relationship between Seneca and Cayuga is more complex, as below, involving multiple separations and recontacts.

Since this issue does not affect the argument presented here, the representation of the relationship has been schematically simplified. Wyandot is actually the descendant of a set of probably closely related languages, including dialects of Huron, Petun, and perhaps Neutral, Wenro, and Erie. The exact status of these last languages is unclear, due to a lack of documentation. Schematically, this situation could be represented as follows.
3. The data throughout the paper are from the following sources. The Tuscarora, abbreviated T., is from the late Edith Jonathan and the late Elton Green, of Lewiston, New York. The Wyandot, (W.), now extinct, is drawn from texts recorded by Marius Barbeau in 1911–1912 and published in 1960. The Mohawk (M.) is from Annette Jacobs, Rita Phillips, Josephine Horne, and Carolee Jacobs, of Caughnawaga, Quebec, and from Mary McDonald of Akwesasne, New York. The Oneida (Oe.) is from Richard Chrisjohn of Red Hook, New York, Winnie Jacobs, of Oneida, New York, Georgina Nicholas of Southwold, Ontario, from a text published by Floyd Lounsbury (1953), and from a text published by Clifford Abbott and Lawrence Johns (1980). The Cayuga (C.) is from Reginald Henry and Jim Skye of Six Nations, Ontario. The Seneca (S.) is from Hazel Thompson, from Steamburg, New York, Sandy Crouse, of Salamanca, New York, and especially Myrtle Peterson, of Steamburg. I am grateful to all of these people who so patiently and generously contributed their time and expertise.

4. For a detailed discussion of the process of noun incorporation, see Hanni Woodbury (1975).

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