Challenges and Benefits of Contact among Relatives: Morphological Copying

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Abstract
Hierarchies of borrowability typically rank morphology as the most resistant to transfer of all aspects of language. Several explanations have been offered. One is that copying takes place primarily between typologically similar systems, and morphology is one of the ways languages can differ the most. Another is that more tightly integrated structures are more resistant to copying, and morphology is inherently tightly integrated. It has also been pointed out that copying depends on speakers establishing equivalence relations between elements of the languages in contact. Morphology may be less accessible to speaker consciousness than other aspects of language. Insight into contributing factors may come from contact situations involving related languages. Such languages are usually similar typologically. But they also present a major challenge: distinguishing contact effects from common inheritance and drift. Certain favorable circumstances can enhance their potential contributions. Most helpful are established genealogical relationships among the languages, a documented history of contact, morphological complexity, and sound changes diagnostic of copied forms. Examples here are drawn from Tuscarora, a Northern Iroquoian language. The Tuscarora separated from the other Northern Iroquoians early and spent perhaps two millennia in the American Southeast on their own. After they rejoined their relatives in the Northeast, there was close contact and intermarriage for two centuries. The languages share complex but similar morphologies. Extensive copying of forms can be discerned: not only whole words, but also bound stems, roots, and affixes. Functional features of bound forms were copied as well, including semantic extension.

Keywords
hierarchies; morphology; typology; semantics; subgrouping; grammaticalization

1. Structure and Borrowability

It is generally recognized that not all aspects of language are equally susceptible to copying in contact situations. Non-basic nouns, for example, are more easily transferred than grammatical markers. Within grammar, morphology is thought to be especially resistant to borrowing. Sapir famously questioned the possibility: ‘So long as such direct historical testimony as we have gives us no
really convincing examples of profound morphological influence by diffusion, we shall do well not to put too much reliance in diffusion theories’ (1921: 206). Various factors have been proposed to account for this resistance. It has been hypothesized that grammatical features are copied only among languages that are similar typologically; morphology is one of the ways that languages can differ the most. It has been observed that more tightly integrated structural aspects of languages are known to resist copying; morphological structure is more tightly integrated than syntactic and discourse structures. It has also been proposed that copying depends on speakers establishing equivalence relations between elements of the languages in contact; morphology may be less accessible to speaker consciousness than larger constructions, particularly in the case of unwritten languages.

One way of teasing apart these factors is to look at a situation considered particularly challenging for work on language contact: contact among related languages. Related languages are often typologically very similar, and they can share much of their morphological form and structure. But they present a major hurdle: distinguishing contact effects on the one hand, from common inheritance and drift on the other. Here it is shown that under the right circumstances, such situations can help us to sort through some of the factors that can affect morphological copying.

Examples are drawn from Tuscarora, a language of the Northern branch of the Iroquoian family in North America. Tuscarora developed independently from its relatives in what is now eastern North Carolina over a period estimated at around nearly two millennia (Lounsbury, 1961). In the early 18th century, the Tuscarora joined speakers of related languages in New York State, where there was close contact, including intermarriage, over a period of two centuries. All of the Northern Iroquoian languages share complex but similar morphologies. Tuscarora provides evidence of transfer involving not only whole words, but also bound stems, roots, and affixes, as well as functional extensions of bound forms.


Havránek (1931), cited in Vachek (1962: 434)
The structure of a language determines its acceptance or rejection of foreign features.

Jakobson (1938: 241)
La langue n’accepte des éléments de structure étrangers que quand ils correspondent à ses tendances de développement.
Vogt (1954: 372), echoing Jakobson
Foreign elements must correspond to innovation possibilities offered by the receiving system.

Another commonly cited factor is the degree of integration of the material in question into the structure of the language.

(2) Resistance of tightly integrated material

Whitney (1881)
Whatever is more formal or structural in character remains in that degree free from the intrusion of foreign material.

Weinreich (1953: 41)
In the interference of two grammatical patterns it is ordinarily the one which uses relatively free and invariant morphemes in its paradigms . . . which serves as the model for imitation.

Haugen (on Weinreich) (1954: 385)
Following hints advanced by other linguists, the author [Weinreich] offers material in support of the thesis that the likelihood of morphemic transfer . . . is in inverse proportion to its structural integration.

Vildomec (1971: 100)
A language will the better resist foreign influence the better developed and organized systems it contains.

It has also been proposed that the apparent importance of typological fit and degree of structural integration are actually symptoms of a more fundamental factor: copying depends on speakers identifying equivalences between the two languages.

(3) Equivalence relations

Haugen (1954: 386)
On those relatively rare occasions when bound morphemes are actually transferred from one language to another, they are such as fit readily into a preexistent category in the recipient language.

Johanson (2008)
On the basis of structural and conceptual similarities, equivalence relations are established consciously or intuitively between elements of the Model Code and elements of the Basic Code.

More tightly integrated structures like morphology may simply be less accessible to the consciousness of speakers.

But just how conscious are speakers of internal morphological structure and of the identity of individual morphemes? How conscious do they need to be?
It is likely that consciousness of morphological structure varies in several ways. One way may be the phonological shape and position of morphemes: speakers may become aware more easily of syllable-sized morphemes at the beginning of words than of single segments inside. Another way may be degree of phonological fusion, that is, the clarity of breaks between morphemes. Still another might be transparency of meaning. And awareness of morphological structure may also depend on characteristics of individual speakers, such as literacy and a propensity to analyze language.

Related languages and dialects, particularly those with well-developed morphological structures, can offer special opportunities for the investigation of contact effects on morphology among typologically similar systems that share deeply integrated structures.

2. Tuscarora

The Tuscarora language is a member of the Northern branch of the Iroquoian family. Relationships among the Iroquoian languages for which there is significant documentation are sketched in Figure 1.

Landy (1978) provides an overview of the documented history of the Tuscarora. The Tuscarora first encountered Europeans in the 16th century in present-day eastern North Carolina. In 1713 they began to migrate northward to join their Five Nations relatives in New York State. It is known that 500 families established villages along the Susquehanna River between the Onondaga and Oneida. In 1723 the Tuscarora were adopted into the League of the Iroquois as the sixth nation.

![Figure 1. Modern Iroquoian Languages.](image-url)
Within the League, Tuscaroras had close relations with the Onondagas, but their closest association was with the Oneidas. They had settlements near the Oneidas both in the Oneida Lake region and on the Susquehanna River and were subject to the same influences in both places. These included missionary visits, which began in the period between King George's War and the French and Indian War and were resumed after the French and Indian War ended. (Landy, 1978: 520)

In 1736 250 warriors were reported to be living in a Tuscarora village west of the Oneidas, and in 1771 the Tuscarora were estimated to number 1000.

Like other Northern Iroquoian groups with links to the British, the Tuscaroras suffered during the American Revolution. Their villages were burned, and some people eventually joined Five Nations groups at the Six Nations Reserve in Ontario. Others took up residence with the Senecas at Big Tree's village on the Genesee River. In 1797 the Senecas sold much of their land, but some was reserved near Lewiston in western New York for the Tuscarora, who still live there today. In 1890 the Tuscarora population there was estimated at 400, but it was noted that there were also almost 60 other Indians including 41 Onondagas living there.

Wendy Rae Bissell, a Tuscarora community member and experienced tribal genealogist, describes the modern situation.

Presently and in the past, we have a multitude (good percentage) of Onondagas who live here as well as Cayugas. I would have to say biggest influence would be Onondagas. As you know, Onondagas are a mixed bunch also, mostly with Oneidas. As I look back in old records, when people were actively speaking the language, I still would say Onondaga had the most influence. (Wendy Rae Bissell, p.c. 2012)

Tuscarora thus provides an optimal situation for the examination of contact among related languages. Genealogical relationships within the family are well established on the basis of identifiable sequences of phonological and morphological innovations, and there is good documentation of contacts through history. The Tuscarora language apparently developed independently over a long period until the early 18th century, then came into close contact with Oneida, Onondaga, Cayuga, and Seneca for approximately two centuries, until the late 19th century when people in all groups began to learn English.

3. Typological Similarity

All of the Northern Iroquoian languages are highly polysynthetic, with templatic morphological structure. The templates are largely the same across the languages. Three lexical categories are distinguished on the basis of internal
morphological structure. Particles contain no internal structure, though they may be compound. Nouns have the structure shown in Figure 2.

<table>
<thead>
<tr>
<th>POSSESSIVE / GENDER PREFIXES</th>
<th>NOUN STEM</th>
<th>NOUN SUFFIX</th>
<th>LOCATIVE ENDINGS</th>
</tr>
</thead>
</table>

Figure 2. Noun structure.

Verbs have the structure shown in Figure 3.

<table>
<thead>
<tr>
<th>PREPRONOMINAL PREFIXES</th>
<th>PRONOMINAL PREFIX</th>
<th>REFLEXIVE MIDDLE</th>
<th>VERB STEM</th>
<th>DERIVATIONAL SUFFIXES</th>
<th>ASPECT SUFFIXES</th>
<th>TENSE, MOOD</th>
</tr>
</thead>
</table>

Figure 3. Verb structure.

The Tuscarora verb template differs from those of the Five Nations Iroquois languages in just two outer prepronominial prefixes, which apparently developed after their separation. Counterparts are summarized in (4).

(4) Morphological comparisons

<table>
<thead>
<tr>
<th>Tuscarora</th>
<th>Five Nations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepronominial prefixes</td>
<td>Negative Coincident</td>
</tr>
<tr>
<td>Contrastive</td>
<td>Contrastive</td>
</tr>
<tr>
<td>Translocative</td>
<td>Translocative</td>
</tr>
<tr>
<td>Factual</td>
<td>Factual</td>
</tr>
<tr>
<td>Duplicative</td>
<td>Duplicative</td>
</tr>
<tr>
<td>Optative</td>
<td>Optative</td>
</tr>
<tr>
<td>Future</td>
<td>Future</td>
</tr>
<tr>
<td>Cislocative</td>
<td>Cislocative</td>
</tr>
<tr>
<td>Repetitive</td>
<td>Repetitive</td>
</tr>
</tbody>
</table>

Pronominal prefixes Pronominals Pronominals

Voice Reflexive Reflexive

Middle Middle

Incorporated noun Noun stem Noun stem

Verb root Verb root Verb root

Derivational suffixes Reversive Reversive

Inchoative Inchoative

Causative Causative

Instrumental Instrumental
The languages also differ slightly in the elaboration of their pronominal prefix paradigms.

The Northern Iroquoian languages are mutually unintelligible. Speakers of a Five Nations language who have had sufficient exposure to another Five Nations language, as at the Six Nations Reserve in Ontario, report that they can understand them to some extent, and in some cases they have learned to speak them. All report that they cannot understand Tuscarora at all. This may be due to several factors. One involves shifts in vowels. The reflex of the Proto-Northern-Iroquoian vowel *e, still pronounced as [e] in the Five Nations languages, is generally pronounced [æ] in Tuscarora. The reflex of Proto-Northern-Iroquoian *o, pronounced [o] in the Five Nations languages, is [u] in Tuscarora. Reflexes of the two nasal vowels of Proto-Northern-Iroquoian, pronounced [ɛ] and [ɔ] or [ʌ] and [ʊ], have merged to [ə] in Tuscarora. Another major set of changes involve alveolars *t and *n, detailed below. These changes are particularly significant in light of the fact that there are so few consonants. The Proto-Northern-Iroquoian inventory is reconstructed with just 11: *t, *k, *kʷ, *s, *ç, *n, *r, *w, *y, *h, and *. Finally, as would be expected, there are differences in vocabulary.

Material cited here comes from the following sources. Modern Tuscarora is from speakers Elton Greene and Howard Hill. Material from the late 19th century and early 20th was documented by J.N.B. Hewitt and published in Rudes (1999). An even earlier wordlist, recorded in North Carolina before the Tuscarora migration north, is in Lawson (1709). Seneca is from speakers Myrtle Peterson, Fidelia Jimmerson, and Ham Jimmerson, and from the manuscript dictionary by Chafe. Modern Cayuga and Onondaga material is from speakers Jim Skye and Reginald Henry, from Foster (1974), and from Woodbury (1992; 2003). Onondaga from 17th century Jesuit manuscripts was published in Shea (1860); an Onondaga dictionary from 1760 by the Moravian missionary Zeisberger was published in 1887. Oneida is from Michelson and Doxtator (2002). For Huron, now known as Wendat, there is

| Benefactive | Benefactive |
| Distributive | Distributive |
| Andative | Andative |
| Aspect suffixes | Habitual Habitual |
| | Perfective Perfective |
| | Stative Stative |
| Post aspectual suffixes | Progressive Progressive |
| | Pasts Pasts |
| | Continuative Continuative |

4. Distinguishing Inheritance from Copying: Sound Change

The major challenge for identifying contact effects among related languages is distinguishing copied forms from cognates. Two major sets of sound changes distinguish native Tuscarora forms from loans. Both involve apicals.

(5) Proto-Northern-Iroquoian *n > Tuscarora t

\[
\begin{align*}
\text{PNI} & \quad *n > \quad \text{Tuscarora } t \\
*\text{-nahkw-} & \quad \text{‘spouse, marriage’} \\
*\text{-nahkw-} & \quad \text{Wendat, Seneca, Cayuga, Onondaga, Oneida, Mohawk} \\
*\text{-tahkw-} & \quad \text{Tuscarora} \\
\end{align*}
\]

Besides / _ (w, y, or h) [+nas]

*nahkw-’spouse, marriage’

-nahkw- Wendat, Seneca, Cayuga, Onondaga, Oneida, Mohawk

-oahkw- ’shirt’

-tahkw- Tuscarora

(6) Proto-Northern-Iroquoian *t > Tuscarora ?n

\[
\begin{align*}
\text{PNI} & \quad *t > \quad \text{Tuscarora } ?n \\
\end{align*}
\]

\[
\begin{align*}
? / _ V \\
? / _ t, r \\
? > \Ø / #, C \\
\end{align*}
\]

*ah-ahkw- ‘shoe’

-ah-ahkw- Wendat, Seneca, Cayuga, Onondaga, Oneida, Mohawk

-ah-ahkw- Tuscarora

uh-ahkw- ‘shoe’

uh-ahkw- Tuscarora

uh-ahkw- ‘shoe’

Additional examples of the resulting correspondences are in cognates for ‘two’ and ‘town’.

(7a) *t *n

\[
\begin{align*}
\text{Tuscarora} & \quad \text{‘two’} & \quad *t *n \\
\text{Seneca} & \quad \text{‘town’} & \quad *n *t \\
\text{Cayuga} & \quad \text{‘town’} & \quad \text{‘town’} \\
\text{Onondaga} & \quad \text{‘town’} & \quad \text{‘town’} \\
\text{Oneida} & \quad \text{‘town’} & \quad \text{‘town’} \\
\text{Mohawk} & \quad \text{‘town’} & \quad \text{‘town’} \\
\end{align*}
\]
These sound changes predate the 1713 Tuscarora migration northward. Among the 188 words recorded by Lawson (1709) are many that show the change, including that for ‘two’.

(7b) Lawson (1709)
Tuscarora       ‘two’       necte

5. Borrowed Words

A number of whole words can be seen to have been copied by the Tuscarora from Five Nations languages after the migration. (Onondaga, Cayuga, and Seneca practical orthographies distinguish non-phonemic voicing on stops t/d and k/g. The allophones are not distinguished here, to facilitate comparison.)

5.1. Unanalyzed Words

Not surprisingly, terms were adopted for concepts that were not part of Tuscarora life in North Carolina. Some were names of plants. The noun ‘birch’ appears to have come from Oneida.

(8) Flora: ‘birch tree’

<table>
<thead>
<tr>
<th>Tuscarora</th>
<th>uná:kye</th>
<th>‘birch’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oneida</td>
<td>ona:ké</td>
<td>‘birch’</td>
</tr>
<tr>
<td>(Onondaga)</td>
<td>ona:kubaʔ</td>
<td>‘birch’</td>
</tr>
<tr>
<td>(Cayuga)</td>
<td>teyowatisthaqh</td>
<td>‘birch’, lit. ‘bark crosswise’)</td>
</tr>
<tr>
<td>(Seneca)</td>
<td>teka:wistaqh</td>
<td>‘birch, bark crosswise’)</td>
</tr>
</tbody>
</table>

(This may be cognate with Cherokee oneka ‘white’.) It is clear that the Tuscarora word is a loan because of the n, which would have appeared as t in a cognate. The Tuscarora does show the effect of a regular native phonological process, whereby a glide y is regularly inserted between k and e: Ø > y / k __ e. At the ends of prosodic phrases, b is automatically added after vowel-final words: uná:kyeb.

Some copied words are terms for animals, birds, and insects. The term for ‘snipe’ most closely matches the Onondaga form.
Fauna and clan: ‘snipe’

<table>
<thead>
<tr>
<th>Language</th>
<th>Word</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuscarora</td>
<td>tuwiswis</td>
<td>‘snipe, Snake Clan’</td>
</tr>
<tr>
<td>Oneida</td>
<td>tawistawe</td>
<td>‘snipe’ (Wisconsin)</td>
</tr>
<tr>
<td>Onondaga</td>
<td>tahwistahwis</td>
<td>‘snipe, Snake Clan’</td>
</tr>
<tr>
<td>Cayuga</td>
<td>towistowiʔ</td>
<td>‘snipe’</td>
</tr>
<tr>
<td>Seneca</td>
<td>kaʔnəwọhtas</td>
<td>‘snipe’, lit ‘it eats worms’</td>
</tr>
<tr>
<td></td>
<td>-ʔnehsiyoʔ</td>
<td>‘be of the Snake Clan’</td>
</tr>
</tbody>
</table>

The word for ‘pussycat’ is interesting. The initial t shows that it was borrowed.

<table>
<thead>
<tr>
<th>Language</th>
<th>Word</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuscarora</td>
<td>tā:kuʔ</td>
<td>‘cat’</td>
</tr>
<tr>
<td>Oneida</td>
<td>takó:s</td>
<td>‘cat’</td>
</tr>
<tr>
<td>Onondaga</td>
<td>takós, takús</td>
<td>‘cat’</td>
</tr>
<tr>
<td>Cayuga</td>
<td>tokos, təkus</td>
<td>‘cat’</td>
</tr>
<tr>
<td>Seneca</td>
<td>toko:t̨iʔ, tokos</td>
<td>‘cat’</td>
</tr>
</tbody>
</table>

This word was itself borrowed into the Five Nations languages, probably first into Mohawk, as takó:s, from Dutch colonists in New York State in the 17th century. The Mohawk occupied the easternmost portion of New York State and were in closest contact with the Dutch. The likely source was Dutch *de poes*. Northern Iroquoian languages lack labials; Dutch p was copied as a labio-velar *kʷ*, and the labialization merged with following rounded vowels: *kʷo > ko*.

### 5.2. Morphologically Complex Words: Unanalyzed?

Some copied words were morphologically complex. All verbs have internal structure, as seen in Figure 3 earlier. An example is the verb ‘it is valuable’.

<table>
<thead>
<tr>
<th>Language</th>
<th>Word</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuscarora</td>
<td>kanːːreʔ</td>
<td>‘it is expensive, valuable, dear’</td>
</tr>
<tr>
<td>Oneida</td>
<td>kanːoːlu</td>
<td></td>
</tr>
<tr>
<td>Onondaga</td>
<td>kanːoːweʔ</td>
<td></td>
</tr>
<tr>
<td>Cayuga</td>
<td>kanːoʔ</td>
<td></td>
</tr>
<tr>
<td>Seneca</td>
<td>kanːoːʔ</td>
<td></td>
</tr>
</tbody>
</table>

This verb has the internal structure in Figure 4.
Some borrowed words show even greater complexity.

(12) Derived verb

<table>
<thead>
<tr>
<th>Language</th>
<th>Verb</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuscarora</td>
<td>Kenuribkhwaʔ</td>
<td>‘I love you’</td>
</tr>
<tr>
<td>Oneida</td>
<td>Kunolikhwaʔ</td>
<td></td>
</tr>
<tr>
<td>Onondaga</td>
<td>Kunoweikhwąʔ</td>
<td></td>
</tr>
<tr>
<td>Cayuga</td>
<td>Konōbhkwąʔ</td>
<td></td>
</tr>
<tr>
<td>Seneca</td>
<td>Konōqhkwaʔ</td>
<td></td>
</tr>
</tbody>
</table>

The $n$ in the Tuscarora marks this as a loan. The two nasalized vowels of Proto-Northern-Iroquoian, *ę and *o, have merged in Tuscarora to [ŋ], written $n$. These verbs were thus adapted to Tuscarora phonology. The Five Nations cognates in (11) and (12) show regular sound correspondences among themselves. Proto-Northern-Iroquoian *r occurs regularly as Oneida l. It was lost from Onondaga, Cayuga, and Seneca between 1700 and 1800, through a series of changes (Mithun, 1980).

(13) Earlier Onondaga

Late 17th century: Shea (1860: 32)

<table>
<thead>
<tr>
<th>Word</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gannoron</td>
<td>‘cher’</td>
</tr>
<tr>
<td>Gonoronk8a</td>
<td>‘cela m’est cher’</td>
</tr>
</tbody>
</table>

Mid 18th century: Zeisberger (1887: 52)

<table>
<thead>
<tr>
<th>Word</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gannoronum</td>
<td>‘dear, theuer’</td>
</tr>
<tr>
<td>Jonopolchqua</td>
<td>‘dear, lieb, werth’</td>
</tr>
</tbody>
</table>
A morphologically-complex noun for ‘silver’ also contains this verb root. In all of the languages, words with the morphological structure of verbs are often used as referring expressions, and are even lexicalized as such. The term for ‘silver’ is such a word.

(14) Tuscarora complex noun
    kahwistanti:reʔ?
    ka-hwist-a-nur-əʔ?
    n-metal-linker-be.precious-stative
    ‘it is precious metal’ = ‘silver’

Oneida    ohwistano:laʔ?
Onondaga   kahwistani:waʔ?
Cayuga     kʰhwistaneʔ?
Seneca     ka:wis stan:əʔ?

6. Copied Bound Morphemes?

Examination of copied forms shows us still more. Speakers were apparently able to identify bound morphemes.

6.1. Bound Noun Root

All morphological nouns in the Northern Iroquoian languages contain at least the components in Figure 6.

<table>
<thead>
<tr>
<th>NEUTER</th>
<th>NOUN</th>
<th>NOUN</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREFIX</td>
<td>STEM</td>
<td>SUFFIX</td>
</tr>
</tbody>
</table>

Figure 6. Basic Noun Structure

The neuter noun prefixes do not match perfectly across the languages. Some nouns in the Five Nations languages have o- and others have ka-, but Tuscarora native nouns have only u-, cognate with Five Nations o-.

(15) Neuter gender prefix
    Tuscarora  always  u-  PNI *o-
    Five Nations  mixed  o-  or ka-  Five Nations innovation
Where Five Nations nouns usually end in -aʔ, Tuscarora native nouns usually end in -e.

(16) Noun suffix

<table>
<thead>
<tr>
<th>Tuscarora</th>
<th>usually</th>
<th>-e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five Nations</td>
<td>usually</td>
<td>-aʔ</td>
</tr>
</tbody>
</table>

A sample distribution of these forms can be seen in the cognate sets in (17) and (18). (Non-cognates are in parentheses.) All of the Tuscarora reflexes begin with u-, while some cognates in Five Nations languages begin with o- and others with ka-.

(17) Tuscarora

- uʔkēhr-e 'ash, dust, powder'
- uʔtákwn-e 'bed, space'
- uʔhē:w-e 'boat, tray'
- uʔtáʔnar-e ‘bread’

(18) Five Nations: some nouns o-, some nouns ka-

<table>
<thead>
<tr>
<th>Oneida</th>
<th>oʔkhá:j-aʔ</th>
<th>‘ashes, dust, powder’</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ka-nákt-eʔ</td>
<td>‘bed’</td>
</tr>
<tr>
<td></td>
<td>ka-hní:wey-dː</td>
<td>‘boat’</td>
</tr>
<tr>
<td></td>
<td>ka-ná:tal-ök</td>
<td>‘bread, cake’</td>
</tr>
<tr>
<td>Onondaga</td>
<td>oʔkē-b-aʔ</td>
<td>‘ashes, dust, powder’</td>
</tr>
<tr>
<td></td>
<td>(ka-náʔkwá-w-aʔ)</td>
<td>‘bed, nest’)</td>
</tr>
<tr>
<td></td>
<td>ka-hí:w-aʔ</td>
<td>‘boat, canoe’</td>
</tr>
<tr>
<td></td>
<td>(aʔ-héːhwá-w-aʔ)</td>
<td>‘bread’)</td>
</tr>
<tr>
<td>Cayuga</td>
<td>oʔkē-b-aʔ</td>
<td>‘ashes, dust, bullet’</td>
</tr>
<tr>
<td></td>
<td>ka-náːkt-aʔ</td>
<td>‘bed’</td>
</tr>
<tr>
<td></td>
<td>ka-hí:w-aʔ</td>
<td>‘boat’</td>
</tr>
<tr>
<td></td>
<td>aʔ-ná:taː-iʔ</td>
<td>‘bread’</td>
</tr>
<tr>
<td>Seneca</td>
<td>oʔkēː-aʔ</td>
<td>‘ashes, dust, powder’</td>
</tr>
<tr>
<td></td>
<td>aʔ-nó:ká-w-aʔ</td>
<td>‘bed, space, room, area, time’</td>
</tr>
<tr>
<td></td>
<td>ka-nó:w-aʔ</td>
<td>‘boat, canoe, tray’</td>
</tr>
<tr>
<td></td>
<td>aʔ-nóʔtaː-iʔ</td>
<td>‘bread, lead, sinker’</td>
</tr>
</tbody>
</table>

Tuscarora speakers were apparently aware of this morphological structure. When they borrowed the noun for ‘corn soup’ early on, for example, they replaced the Oneida noun suffix -aʔ with their own -e. The n in the root shows that this is a loan.
(19) Tuscarora borrowed noun root: -ran-

Tuscarora \( u-\text{ràn}=\text{e} \) ‘corn soup’

Oneida \( o-\text{làn}-\text{d} \) ‘corn soup’

6.2. Bound Morphologically Complex Noun Stem

Tuscarora also contains borrowed complex noun stems with native inflection. The terms for ‘love’ are based on the verb root *-nor- ‘be dear’, with causative-instrumental *-hk\-
\- and nominalizer *-htsr-. (In Onondaga and Seneca, *-ra? > *ræ? > æ?.) The Tuscarora form shows the same complex noun stem as the other languages, but the inflection is native.

(20) ‘love’

Tuscarora \( u\text{-nur\éhkwdhèr}=\text{e} \)

Oneida \( ka\text{-nolukwáhsl}=\text{a?} \)

Onondaga \( ka\text{-nowékhwahs}=\text{æ}:\text{ʔ} \)

Cayuga \( ka\text{-nóhkwahrs}=\text{æ}:\text{ʔ} \)

Seneca \( ka\text{-nó̱kwaṭsb}=\text{æ}? \)

6.3. Bound Incorporated Noun Root

A major, productive construction in Northern Iroquoian languages is noun incorporation, whereby a noun stem is compounded with a verb stem to yield a new verb stem. Noun stems vary in their propensity to be incorporated along a continuum, from those that never incorporate to those that always incorporate. Verb stems vary similarly in their propensity to incorporate. Among the noun stems that incorporate very frequently are those for ‘body’, ‘mind’, and ‘matter’. Many verbs containing the noun root for ‘body’ designate situations with physical effects on animate beings; many containing the noun root for ‘mind’ designate situations with mental effects; many containing the noun root for ‘matter’ pertain to abstractions.

The basic noun root for ‘body’ in Tuscarora is the native -kyerh-. The noun root for ‘body’ in the Five Nations languages is -ya\text{t}\text{-}. Neither occurs in nouns on its own. We can see a calque in the Tuscarora term for ‘goat’, formed after European contact, literally ‘it bodily stinks’. The structure of the Tuscarora matches those of the Five Nations forms morpheme for morpheme, but the Tuscarora contains the native root –kyerh- in place of the Five Nations –ya\text{t}\text{-}. This substitution suggests an awareness of the internal structure of the model.
(21) Tuscarora calque

\textit{ka}_-kyer_\textit{h}akra: \theta 'goat'

\textit{ka}_-kyer_\textit{ha}kra: \theta \textup{body-stink}

Oneida \textit{ka}_yaʔt\textit{aklahse} \theta 'goat'

Onondaga \textit{ka}_yaʔt\textit{i:ke:s} \theta 'goat'

Cayuga \textit{ka}_yaʔt\textit{akrahs} \theta 'goat'

Seneca \textit{ka}_yaʔt\textit{akes} \theta 'goat'

(Without any diagnostic sound sequences, it is impossible to determine whether the verb root is native or copied.) Tuscarora does contain a cognate of the Five Nations -\textit{ya}t\textit{-}: -\textit{ya}_n\textit{- ‘corpse’.

Tuscarora also borrowed terms containing the Five Nations root -\textit{ya}t\textit{-}. The verb in (22) contains the copied incorporated noun root -\textit{ya}t\textit{-}, copied verb root -\textit{nur}e, and copied causative -\textit{hst}. The complex stem or even word could have been copied as a unit. (The masculine agent prefix ra- and habitual aspect suffix -haʔ are cognate across the languages.)

(22) Incorporated into borrowed verb

ra-\textit{ya}ʔt\textit{anur}e\textit{hst}haʔ

\textup{m.sg.agent-body-linker-precious-caus-habitual}

'he ennobles it'

The borrowed noun root -\textit{ya}t\textit{-}, which occurs only incorporated in both Tuscarora and the Five Nations languages, also appears incorporated into native Tuscarora verbs.

(23) Incorporated into native verb

\textit{wa}ʔaku\textit{ya}ʔt\textit{ahtir}ʔ

\textup{factual-generic.patient-body-linker-be.hard-pfv}

'one walked upright'

The fact that the verb root -\textit{htir}- ‘be hard, solid’ is native to Tuscarora can be seen by comparing its Five Nations cognates, which show the expected sound correspondence.

(24) Cognates

\begin{tabular}{ll}
Tuscarora & -\textit{htir}- \textit{yabti:re} ‘it is hard, durable, solid’ \\
Oneida & -\textit{hni}- \textit{yohnili} ‘it is hard, solid’ \\
Cayuga & -\textit{hmi}- \textit{ohni:yoh} ‘it is hard, tough’ \\
Seneca & -\textit{hni}- \textit{o:niyoh} ‘it is hard, tough, solid’
\end{tabular}
The same complex stem exists in all of the languages, though the meaning is slightly different.

(25) Tuscarora  
    -yaʔt-a-htir-
  
Onondaga  
    -yaʔt-a-hniʔR-
    hoyaʔtahni:  ‘he is strong’
  
Cayuga  
    -yaʔt-a-hniy-
    etwakyʔtahni:yaʔ  ‘we will all be strong’
  
Seneca  
    -yaʔt-a-hniʔ-
    hotiyaʔtahni:yaʔ  ‘they’re tough (people)’

Again it appears that Tuscarora speakers were aware of the internal structure of complex verb stems.

6.4. Bound Verb Root

Bound verb roots were apparently borrowed as well, though they never occur on their own as words. The basic Tuscarora verb root for ‘buy’ is -tyaʔt-, while the Five Nations counterpart is -hninę, seen earlier. Tuscarora has a cognate root -htinę meaning ‘beg for, borrow’.

(26) Tuscarora Native  
    -tyaʔt  ‘buy, bribe’
    Native -htinę  ‘beg for, borrow, plead, request’
    Loan -hninę  ‘buy’ (only with incorporated nouns in Tuscarora)

We see the native verb root with incorporated native noun roots, like those for ‘potato’ and ‘grain’.

(27) Native verb root with native incorporated nouns

raŋθaʔtyaʔthaʔ  ‘he buys potatoes’  -ŋθa-tyaʔt
raŋθaʔhnayaʔthaʔ  ‘he buys grain’  -ŋθa-tyaʔt

We also see the copied verb root with the same incorporated native noun roots.

(28) Native nouns, copied verb root

a. raŋθaʔhni:nę  ‘he buys potatoes’  -ŋθa-tninę

Tuscarora  
    -ŋθa-  ‘potato’
Oneida  
    -hnanaʔt-  ‘potato’
Onondaga  
    -nenobkw-  ‘potato’
Cayuga  
    -honaʔt-  ‘potato’
Seneca  
    -nomaʔt-  ‘potato’
b. *ra*\(^{\text{neh}^\text{sh}}\)nas\(^{\text{hi}}\)n\(^{\text{e}}\) ‘he buys seed, grain’

<table>
<thead>
<tr>
<th>Language</th>
<th>Root</th>
<th>Suffix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuscarora</td>
<td>-neh</td>
<td>-sh-</td>
</tr>
<tr>
<td>Oneida</td>
<td>-nht</td>
<td>-t-</td>
</tr>
<tr>
<td>Onondaga</td>
<td>-nht</td>
<td>-t-</td>
</tr>
<tr>
<td>Tuscarora</td>
<td>-neh</td>
<td>-sh-</td>
</tr>
<tr>
<td>Oneida</td>
<td>-nht</td>
<td>-t-</td>
</tr>
<tr>
<td>(Onondaga)</td>
<td>-nht</td>
<td>-t-</td>
</tr>
<tr>
<td>Cayuga</td>
<td>-neh</td>
<td>-sh-</td>
</tr>
<tr>
<td>Seneca</td>
<td>-nht</td>
<td>-t-</td>
</tr>
</tbody>
</table>

‘grain, seed’

Tuscarora -neh ‘corn’

Oneida -nht ‘corn’

Onondaga -nht ‘testicles’

Tuscarora -neh ‘seed, grain’

Oneida -nht ‘corn’

(Onondaga -atyetsh ‘seed’)

Cayuga -nehokw ‘seed’ -neh-ako ‘picked corn’

Onondaga -nhyt ‘field’

Cayuga -nhyt ‘field’

Seneca -nhyt ‘field’

Oneida -nht ‘field’

Seneca -nhyt ‘field’

The copied verb root is not restricted to full borrowed words. We cannot know for certain, however, whether speakers perceived equivalences between their own complex stem structure and those of the donor languages, or borrowed complex stems then analyzed them later and subsequently used the components in new formations.

6.5. **Bound Affix**

A number of Tuscarora noun stems contain the nominalizer -hst. An interesting example is the term for ‘paper, book etc’.

(29) Tuscarora noun stem

\[\text{uha}t\text{e}hst\]

\[\text{u-} + \text{ha}t\text{e} + \text{hst} + \text{e}\]

\[n\text{-write-NMLZ-NOUN.SUFFIX}\]

‘written thing’

The inflectional prefix *u*- and suffix *-e* are native, but the stem consists of a copied verb root and copied nominalizer. The verb root *ha\text{te}e* corresponds to *ha\text{te}e* in all of the Five Nations languages; the Tuscarora native root for ‘write’ is *\text{nq}\text{e}\text{t}*. The nominalizer *hst* corresponds to *hst* in all of the Five Nations languages; the Tuscarora cognate is *hsn*-. This could suggest that the stem *ha\text{te}ehst* was copied as a unit. But this combination does not match those of any of the other languages. A different nominalizer appears in this term in those languages (and in Wendat).
This form and others indicate that the derivational suffix -hst now has a life of its own in Tuscarora. In fact it is attached to native verbs as well. (After a consonant, it has the form -ahst in all of the languages.)

The Tuscarora middle voice prefix -aʔn- in -aʔn-ęty-ahst- ‘clothing’ is descended from the Proto-Northern-Iroquoian *-at-, a form it retains in all of the Five Nations languages. The Tuscarora verb -ęty- ‘make’ is descended from the Proto-Northern-Iroquoian *-ęny-, a form it retains in all of the Five Nations languages. The Tuscarora root -tenę- ‘be sunny’ is descended from a Proto-Northern-Iroquoian root *-nenǫ-, which continues in Seneca as -nenǫ ‘be warm’. All of the prefixes and roots in (31) and (32) are native.

The copying of the nominalizer -hst may have been facilitated by the fact that it is related to a causative-instrumental suffix of the same shape and is ultimately descended from a verb root of the same shape meaning ‘use’. Both occur in all of the languages, including Tuscarora. In Tuscarora, those morphemes retain the shape -hst in word-final position and before a consonant.

7. Copied Semantics

Copying was not limited to forms. It can also be detected in semantic extensions of cognate forms. Proto-Northern-Iroquoian contained a verb root *-iyo ‘be large, great, grand’, whose reflexes persisted with that meaning in both Tuscarora and Huron/Wendat. (This is the root in Ontario, literally ‘big lake’.) Some Tuscarora examples are in (33) - (37), and Wendat in (38).
wahęʔnıyụ́:  
N-meadow-be.large-stative  
'It is a large meadow, field'

(34) wahahiyu:  
N-path-be.large-stative  
'the path is great' = 'great path'

(35) ḥbiyuhtha?  
REPETITIVE-M.SG.AGENT-be.large-CAUS-HABITUAL  
'He makes it large again' = 'He enlarges it.'

(36) rahahiyuhtha?  
M.SG.AGENT-path-be.large-CAUS-HABITUAL  
'He is enlarging, widening the road.'

(37) Uhtawiyuʔkye  
N-current-be.large-LOC.NMLZ  
'large stream place' = 'Mississippi River'

(38) Wendat (Huron) io 'be large, great'  
chiuoinđiou  
2sg-voice-be.great-stative  
'You are great in voice' = 'You are master'

In the Five Nations languages, however, the meaning of the root has evolved to mean ‘be good, nice, attractive’.

(39) Five Nations -iyo  
Oneida tehāsiʔtsiyọ́:seʔ  
‘he has nice feet’  
wahsohkwiʔyọ́  
‘it is a nice color’  
Onondaga obahiyọ́  
‘good road’  
obsohkwiʔyọ́  
‘beautiful color’  
Cayuga kaahę:tliyọ́:  
‘good field’  
teyohnekliyọ́:  
‘it is not good water’  
Seneca kačřiyó:  
‘it is a good garden’  
onohkwaʔtsiyọ́:  
‘good medicine’
A different verb root can be reconstructed to Proto-Northern-Iroquoian meaning ‘be good’.

(40) Proto-Northern-Iroquoian *-akwaht ‘be good’
    Tuscarora wí:kwahst ‘it is good’
    kahehn: akwaht ‘it is a good field’
    Huron Yuqasté ‘je suis beau’ (Sagard 1632: 15)
    j:qastí ‘avoir beau temps’ (Potier in Steckley 2007: 214)

Modern Tuscarora shows occasional extensions of the root -iyu from ‘be big, great’ to ‘be nice, beautiful’, presumably under the influence of its Five Nations neighbors.

(41) wí:yu:
    N-be.beautiful-stative
    ‘it is great, beautiful’

(Among the Five Nations languages, only Seneca permits the use of this verb root without an incorporated noun.)

(42) Calque on Five Nations complex stems
    θ-atra?θwí:yu:
    θa-at-ra?θw-iyu-:
    2SG.PATIENT-MIDDLE-luck-be.good-stative
    ‘Your luck is good’ = ‘You are lucky’
    Oneida watla?swí:yo ‘good luck’
    Onondaga watce?:shwí:yo ‘good luck’
    Cayuga watra?swi:yo ‘good luck’
    Seneca watÊ?swí:yo ‘good luck’

(43) Additional calques on Five Nations verb stems
    ru?tikbrió:yù?θeb ‘it pleases him’     lit ‘it is mind good to him’
    urhwí:yu: ‘it is sure, certainly’     lit ‘it is matter good’

8. Copied Extension of Grammatical Function

So far we have seen the copying of not only whole words but also bound morphemes: noun roots, verb roots, derivational suffixes. We have seen the copying of semantics. We can also see the copying of grammatical function.

As shown in the template laid out earlier in Figure 3, all Iroquoian verbs contain pronominal reference to their core arguments: one for intransitives
and two for transitives. First, second, and third person forms can be recon-
structed for Proto-Iroquoian, and their reflexes continue into all of the mod-
ern languages. Among third persons, Proto-Iroquoian distinguished just a
basic third person gender category and a generic category ‘one, they, people’. 
This system persists in the only language of the Southern Iroquoian branch:
Cherokee. (Each of these gender categories is distinguished in a number of
pronominal forms: both agent and patient prefixes and various transitive pre-
fixes such as ‘he/she/it > me’, he/she/it > us two’, ‘I>/him/her/it’, ‘we two
inclusive > him/her/it’ etc.)

(44) Proto-Iroquoian third persons
Basic third person ‘he/she/it’ *ka- etc.
Generic ‘one, they, people’ *ye- etc.

Sometime after the first split, the Northern Iroquoians added a masculine
gender category. Reflexes of this marker persist in all of the modern Northern
languages. As a result, the function of the original basic third person category
shrank to just neuters and feminines.

(45) Proto-Northern-Iroquoian
Masculine *hra- etc.
Feminine, Neuter (residue) *ka- etc.
Generic *ye- etc.

This system persists in Wendat (Huron) and Wyandot.

After the Tuscarora and Huron-Wyandot groups had separated from the
other Northern Iroquoians, the remaining Northern Iroquoians, who became
the Five Nations, began to use the Generic category as a sign of respect in
referring to certain female persons, such as grandmothers and mothers. It is
not possible to know whether this practice began at the time of Proto-Five-
Nations, or later with subsequent spread among the various Five Nations
communities, who were in close contact with each other.

(46) Five Nations
Masculine *hra- etc.
Feminine (some), Neuter *ka- etc.
Feminine (others), Generic *ye- etc.

This pattern persists in modern Mohawk, Oneida, and Onondaga. It has been
extended in the western Five Nations languages Cayuga and Seneca, where
now all female persons are referred to with the original generic forms.
In all of the Five Nations languages, however, traditional personal names for women still contain the *ka- prefix, never the generic *ye- prefix, a testament to the older usage.

Interestingly, Tuscarora usage now matches that of Cayuga and Seneca. Significantly, the match is with its geographic neighbors, not its closest relatives. A few old crystallized Tuscarora nouns still show the earlier use of *ka- forms, such as káhskwariʔ ‘old woman’, as well as traditional women’s names.

9. Copied Stages of Grammaticalization: Modality

Finally, Tuscarora shows what appear to be the results of a full pathway of grammaticalization.

The Five Nations languages all contain cognates of a verb root *-kwény- with the basic concrete meaning ‘beat’, as at war, in a fight, or in a game. The addition of the middle voice prefix *-at- creates a stem ‘win’.

In all of the languages, this verb has also developed into an indicator of dynamic modality, the ability of a participant to carry out an action. The pronominal prefix on the verb refers to the participant.

In the western languages it has been extended still further to indicate general possibility, from enabling conditions internal to the participant to
those external to the participant as well. Here the pronominal prefix is neuter and refers to the situation.

(50) Onondaga, Cayuga, Seneca: ‘be able’ > ‘be possible’
   Onondaga  o-kwe:ny-ôh  ‘it is possible’
   Cayuga    o-kwe:ny-ôh  ‘it is possible’
   Seneca    o-kwe:ny-ôh  ‘it is possible’

(51) Onondaga (Woodbury, 1992: 484.1)
   so  then  here  place  again  it  will  be  possible  one  will  be  happy
   ‘This is where it will again be possible for them to be happy.’

(52) Cayuga (Foster, 1974: 302.91)
   Né: ne  okwé:nyo  behyóhyéthwáhoʔ?
   that  it  is  possible  one  will  draw  on  them
   ‘It will be possible for people to draw on them.’

(53) Seneca (Wallace Chafe, p.c.)
   it  is  possible  bird  you  will  feed  them
   ‘[After winnowing, you have chaff left over.] You can feed the birds.’

The same form has been extended one step further in Seneca to indicate permission.

(54) Seneca  permission (Wallace Chafe, p.c.)
   Okwe:nyo: b  ēkáthaʔtíʔ?
   it  is  possible  I  will  borrow  it
   May  I  borrow  it?

Tuscarora shows the same verb root, but it is clear that it has been copied from the Five Nations languages, because it contains n, just like they do. The copied verb stem has the same concrete meaning as in all of the Five Nations languages.

(55) Tuscarora ‘win’ (Elton Greene, speaker p.c.)
   Êkayé:kق؟  kahnéʔ  kyé:nik:  ëhratkuwê:niʔ?
   ë-ka-yé:kق؟  kahnéʔ  kyénik:  ë-hr-at-kweníʔ?
   fut-3PL.agent-see-pfv  who  this  fut-m.sg.agent-middle-beat-pfv
   they  will  see  who  this  they  will  win
   ‘They would see who would win.’
(56) Tuscarora ‘win’ (Elton Greene, speaker p.c.)

\[
\begin{align*}
&H:á:ñe?: \quad wèhte? \quad kyènì: kè: \quad wakatkwenyèha?nëyè? \\
&\text{that} \quad N-\text{mean-STATIVE} \quad \text{this} \quad 1SG.PATIENT-MIDDLE-\text{beat-STATIVE-PROG} \\
&\text{that} \quad \text{it means} \quad \text{this} \quad \text{I am winning} \\
\end{align*}
\]

‘That means I am winning.’

The same verb is also used with modal functions. It can indicate ability, that is, participant-internal enabling conditions, as in all of the Five Nations languages.

(57) Tuscarora participant-internal ability (Hewitt, RC 19: 85.80)

\[
\begin{align*}
&Éhra\text{kweh}nì? \\
&\text{fut-M.SG.AGENT-\text{be.able-PFV}} \\
&\text{he will be able} \\
&\text{he will bear the earth on his back.}'
\]

Furthermore, it can indicate general possibility, that is, participant-external enabling conditions as well, as in Onondaga, Cayuga, and Seneca.

(58) Tuscarora participant-internal ability (Elton Greene, speaker p.c.)

\[
\begin{align*}
&A\text{we-kyèh} \quad kwèhs \quad abrakwènì? \\
&\text{it would be possible}\quad \text{a lot you would catch of fish} \\
&\text{‘You could catch a lot of fish [because there are so many there].’}
\end{align*}
\]

(59) Tuscarora participant-external enabling conditions (Elton Greene, speaker p.c.)

\[
\begin{align*}
&A\text{kakwènì?} \\
&\text{it would be possible} \\
&\text{‘They would be able to cross [because there was a grapevine hanging there].’}
\end{align*}
\]

Finally, it is also used for permission, an extension otherwise seen only in Seneca, the closest geographic neighbor to Tuscarora.
(61) Tuscarora permission (Elton Greene, speaker p.c.)

\[
\begin{align*}
\text{Ekakwê:ni} & \rightarrow \text{ekayetehni:nêhek}, \\
\text{e-ka-kwêni} & \rightarrow \text{e-kayaw-arê-hninê-hek} \\
\text{fut-n-be:possible-pfv} & \rightarrow \text{fut-3pl.agent-middle-buy-cont} \\
\text{it will be possible} & \rightarrow \text{they will keep selling}
\end{align*}
\]

\[
\begin{align*}
kyê:ni:kê: & \rightarrow \text{ha?} \\
kyenikê & \rightarrow \text{ha'} \\
\text{this} & \rightarrow \text{the}
\end{align*}
\]

\[
\begin{align*}
ta:wê:te & \rightarrow \text{tawête} \\
\text{the what} & \rightarrow \text{what}
\end{align*}
\]

\[
\begin{align*}
\text{kayaketyi:yahs.} & \rightarrow \text{kayak-eti:y-ahs} \\
\text{they make} & \rightarrow \text{they}
\end{align*}
\]

‘They could sell what they make [because they were given permission].’

It seems most likely that the full range of functions was copied into Tuscarora, though it is impossible to know for certain. What is interesting is that this set raises the possibility that we might find evidence of an extended pathway of grammatical development within a language, but that that development may not have occurred within the language at all. The results of each stage might have been copied. The development of grammatical markers of modality in the Northern Iroquoian languages is discussed in detail in Mithun (to appear).

10. Conclusion: Contact Effects Among Related Languages

The study of contact effects among related languages presents a serious hurdle: distinguishing contact-induced effects from common inheritance and drift. Certain circumstances can help with the task.

As in all investigation of contact-induced language change, documentation of actual contact is a valuable piece of the picture. We are fortunate in the case of Tuscarora that historical records place the speakers in the Southeast until the early 18th century, well over 500 miles from their Five Nations relatives. We cannot know for certain exactly how long the two groups were separated, or that there was no contact during the centuries before the 18th century. There is also good documentation of contact beginning in the early 18th century and extending over a period of two centuries between the Tuscarora and the Oneida, Onondaga, Cayuga, and Seneca, contact that included intermarriage.

A second set of circumstances involves innovations which permit the establishment of genealogical relations within the family. Crucial are the presence of diagnostic sound shifts, which allow the identification of borrowed forms. We are lucky on both counts with regard to Tuscarora. Particularly useful are two conditioned sound shifts undergone by Tuscarora after the separation
from the other Northern Iroquoians: Proto-Iroquoian *n > Tuscarora t, and Proto-Iroquoian * t > Tuscarora ?n. The well-established subgrouping further permits the reconstruction of sequences of events, such as the Tuscarora extension of the use of generic pronominal forms to all female persons, on the model of just its nearest geographical neighbors.

The possibility of identifying contact effects among related languages, in this case languages which show elaborate morphological structures, provides an opportunity for investigating the transfer of forms and patterns usually assumed to be below the level of conscious of speakers. The Iroquoian languages are polysynthetic and fusional. Most morphemes apart from particles are bound, not occurring as words on their own. Speakers do not have conscious access to the identities of morphemes, though they manipulate the morphology productively. If asked which part of a word like kanù:rę ‘it is valuable’ means ‘valuable’, a Tuscarora speaker would not normally be able to isolate the root -nur- (unless he or she was a trained linguist). This is of course a way in which languages and even constructions within a language can vary.

But Tuscarora shows that bound morphemes can be transferred across languages. We find replication of Five Nations forms at the word, stem, root, and affix levels. Copied forms include whole words such as the noun tá:ku:θ ‘pussycat’ and the verb kanù:ręʔ ‘it is dear, valuable, expensive’; noun stems such as -nure-hkw- ‘love’; verb stems such as -at-raʔw-iyu- ‘have good luck’; noun roots such as -yaʔt- ‘body’; verb roots such as -hniŋę ‘buy’; and affixes such as the nominalizer -hst. We cannot know whether the bound forms were copied directly. Speakers may have copied whole words, then analyzed them.

Transfer was not limited to form. The semantic extension of bound morphemes has been replicated as well. An example is the Tuscarora root -iyu which continues the original Proto-Northern-Iroquoian meaning ‘be large, great’, but has also been used more recently with the innovated Five Nations meaning ‘be nice, good’. The semantic extension of grammatical affixes has also been extended. The original generic category ‘one, people’ has been extended to refer to all female persons in Tuscarora, on the model of its western Five Nations neighbors Cayuga and Seneca.

Finally, Tuscarora shows the products of all stages in a pathway of grammaticalization, from the copied verb root -kweny- with concrete meaning ‘beat, win’, through ever more abstract and general modal meanings ‘be capable of’ (participant-internal ability), ‘be possible’ (general possibility), and finally permission, on the model of its nearest neighbor Seneca.

There is much about the nature of contact effects among related languages that we can never know. But there is also much to discover.
References


