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Typology and deep genetic relations in North America*

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Throughout most of the history of North American Indian linguistics, a tradition spanning over three centuries, scholars have devoted intensive efforts to the classification of the hundreds of languages indigenous to the continent. For the most part, this work has proceeded from the establishment of regular sound correspondences among closely related languages to the investigation of those among more distantly related groups. Once phonological correspondences are understood, grammatical systems are compared. Steady progress has been made in the grouping, subgrouping, and reconstruction of most of these languages. By 1891, Major John Wesley Powell of the Smithsonian could propose fifty-some language families north of Mexico, and these are still recognized, with a few modifications, today.

Many scholars engaged in this comparative work have been impressed by the structural resemblances among these languages. An Iroquoianist encountering Algonquian languages for the first time feels a sense of instant recognition, although there are no discernible cognates between the two families. Even linguists not specializing in American Indian languages often have notions about their general character.

Such structural resemblances have been noticed since the early nineteenth century. Peter Stephen Duponceau, secretary to the American Philosophical Society, had compared vocabularies of a number of languages, and divided the eastern ones into four separate families: Eskimo, Algonquian, Iroquoian, and ‘Floridian’ (actually a mixture of southeastern languages). Despite their profound lexical differences, on which he based his classification, he was impressed with their grammatical resemblances. In his essay Mémoire sur le système grammatical des langues de

* I am grateful to the following speakers who have graciously shared their expertise on their native languages: Hasan Basri, of Palu, Indonesia on Selayarese, Margaret Edwards and Sonny Edwards, of Ahkwesahsne, Quebec, on Mohawk, and Frances Jack, of Hopland, California, on Central Pomo. I also appreciate comments provided by Yakov Malkiel on an earlier version of the paper.
quelques nations indiennes de l'Amérique du nord, he cited their common polysynthetic nature, the high numbers of morphemes contained in single words.

Le caractère général des langues américaines consiste en ce qu'elles réunissent un grand nombre d'idées sous la forme d'un seul mot; c'est ce qui leur a fait donner par les philologues américains le nom de langues polysynthétiques. Ce nom leur convient à toutes (au moins à celles que nous connaissions), depuis le Groenland jusqu'au Chili, sans qu'il nous ait été possible d'y découvrir une seule exception, de sorte que nous nous croyons en droit de présumer qu'il n'en existe point. (Duponceau 1831: 89)

The pervasiveness of polysynthesis in America was the source of much discussion throughout the remainder of the nineteenth century and into the twentieth. Philologists, engaged in establishing relationships on the basis of demonstrable sound correspondences, began to wonder whether such structural unity might be indicative of deeper genetic ties. It was proposed on several occasions that all American languages “descended from a single parent language, for, whatever their differences of material, there is a single type or plan upon which their forms are developed and their constructions made” (Whitney 1889: 348). (A history of nineteenth-century views on the relative value of lexical and grammatical correspondences in genetic classification can be found in Haas 1969.)

Daniel Brinton, a contemporary of Powell, also noted the pervasiveness of polysynthesis, and further described the characteristics of polysynthetic languages as follows:

The psychic identity of the Americans is well illustrated in their languages. There are indeed indefinite discrepancies in their lexicography and in their surface morphology; but in their logical substructure, in what Wilhelm von Humboldt called the “inner form”, they are strikingly alike. The points in which this is especially apparent are in the development of pronominal forms, in the abundance of generic particles, in the overweening preference for concepts of action (verbs), rather than concepts of existence (nouns), and in the consequent subordination of the latter to the former in the proposition. This last mentioned trait is the source of that characteristic called incorporation ... I have yet to find one of which we possess ample means of analysis, in which it does not appear in one or another of its forms, thus revealing the same linguistic impulse. (Brinton 1891, cited in Haas 1969)

The criterion of structural similarity was formally applied to a classification of North American languages by Edward Sapir in 1929. Sapir was both an experienced field worker and a rigorous historical linguist. He had worked extensively with speakers of a variety of languages, and done
careful reconstruction based on the comparative method in several families, in particular, Athapaskan and Uto-Aztecan. It was clear to him, however, that due to the limited documentation of many American languages, and the tremendous time depths separating them, the traditional comparative method could be of little use in establishing deeper ties.

After pointing out the phonological and morphological diversity to be found within North America, he proposed an overarching scheme which conflated Powell’s fifty-some families into six superstocks: Eskimo-Aleut, Algonkin-Wakashan, Nadene, Penutian, Hokan-Siouan, and Aztec-Tanoan. He based these groupings purely on structural characteristics, but he was careful to specify that the results were meant to be only suggestive.

It is impossible to say at present what is the irreducible number of linguistic stocks that should be recognized for America north of Mexico, as scientific comparative work on these difficult languages is still in its infancy. ( Sapir 1929)

A number of Sapir’s new combinations have since been confirmed by further documentation of the languages and comparative work. Others remain hypotheses, due to the great time depth involved, sufficient to obscure almost all cognates, and the antiquity of language contact, particularly in such areas as the Northwest and California. In some cases, resemblances across superstock boundaries now appear as strong as those within them. Sapir was sufficiently careful however, in specifying the degree of confidence he was willing to accord his various proposals, that this work has proven useful in pointing the way to areas inviting special investigation.

The reliability of structural resemblances as indicators of deeper genetic relationship has not yet been clearly established, however. Among the grammatical features most often cited as typical of North American languages are the following:

(i) polysynthesis,
(ii) pronominal forms,
(iii) incorporation, and
(iv) the preference for concepts of action (verbs) rather than concepts of existence (nouns) and the consequent subordination of the latter to the former in the proposition.
1. Polysynthesis

The term polysynthesis refers technically to a high number of morphemes per word. The extreme polysynthesis characteristic of many North American Indian languages is familiar to most of those who have been exposed to them. Words like those below, containing large numbers of morphemes, are not at all uncommon in North America. In fact, they can be found in languages in each of Sapir’s superstocks. (Hyphens indicate morpheme boundaries; periods within interlinear translations do not. The English gloss ‘provide.with’ in the first example thus corresponds to a single Greenlandic morpheme.)

(1) Greenlandic Eskimo (Eskimo-Aleut):
   aliikkus-irsu-i-llammas-sua-a-nira-ssa-gukku
   entertainment-provide.with-HALF.TRANSLITIVIZER-one.
   good.at-big-be-say.that-FUTURE-1.SINGULAR.3.SINGULAR.
   CONDITIONAL
   ‘if I should say that he is a good entertainer’ (Fortescue 1984: 203)

(2) Cree (Algonquian, Algonkin-Wakashan):
   kīsk-ikw-ēt-ahw-ē-w
   sever-neck-with.handle-by.medium-3.SINGULAR-4.SINGULAR
   ‘he severs his neck with an axe’ (Wolfart 1973: 73)

(3) Hupa (Athapaskan, Nadene):
   ya-na-ki-s-da-mni-ll-ë
   to.pieces-again-INDEFINITE.OBJECT-PROGRESSIVE.3d.
   MODAL-throw.several.things-at.last
   ‘she smashed it’ (Goddard 1911: 112)

(4) Takelma (Penutian)
   bēm-wa-ë-t!oxo'-xi-ë
   stick-together-hand-gather-in.1.SINGULAR
   ‘I gather sticks together’ (Sapir 1922: 65)

(5) Mohawk (Iroquoian, Hokan-Siouan):
   i-ons-a-ha-hnek-öntsien-ht-e9
   TRANSLOCATIVE-REPETITIVE-AORIST-MASCULINE.
   SINGULAR.AGENT-liquid-fetch.water-CAUSATIVE-
   PUNCTUAL
   ‘he scooped up the water again’ (Margaret Edwards: p. c.)
(6) Tetelcingo Nahuatl (Uto-Aztecan, Aztec-Tanoan): 
t-tlahko-tla-kʷ-s-ki
1.PLURAL-half-UNSPECIFIED.OBJECT-eat-FUTURE-PLURAL
‘we will eat at noon’ (Tuggy 1979: 48).

Not all North American languages exhibit nearly this degree of synthesis, however. While there are no extreme isolating languages, like some of those found in Asia, there are numerous languages roughly comparable in degree of synthesis to many Indo-European counterparts. The sentence below opens a tale from Wappo, a California language.

(7) Wappo (Isolate, Hokan):
{lòkh-noma-h} nóm-khiʔ, khón’,
goose-camp-LOCATIVE live-FACTIVE once
‘Long ago at Goose Camp,
chica:-met’-a:yi, meʔèw
bear-woman-SUBJECT POSSESSIVE-husband
k’éšu:-has-k’a.
dereer-old-with
‘Bear Woman lived with her husband Deer.’ (Sawyer – Somersal 1977: 106)

At the same time, long words are not at all restricted to the Americas. Polysynthetic languages can be found in most areas of the world. Note the morphological structure of the verbs below from Africa, and India, respectively.

(8) Turkana (Nilo-Saharan, Nigeria):
{ni-k-i-înis-àán-a-kî}
NEGATIVE-TRANSITIVE-2.SINGULAR-boast-HABITUAL-DATIVE
‘do not boast at me (all the time)’ (Dimmendaal 1983: 449)

(9) Ngandi (Non-Pama-Nyungan, Australia):
baru-ja-maŋa-gulk-â-i
3.PLURAL/3.MASCULINE.SINGULAR-now-neck-cut-AUGMENT-PAST.PUNCTUAL
‘they hanged him’ (Heath 1978: 277)

(10) Sora (South Munda, India):
jí-lo:-ʔjeŋ-t-am
stick-mud-leg-FUTURE-2.SINGULAR
‘mud will stick to your leg’ (Ramamurti 1931)
Selayarese (Austronesian, Indonesia):
*la-mu-paka-ta-s-sunjê-yan-i*
FUTURE-2.SINGULAR.ERGATIVE-CAUSATIVE-BENEF ACTIVE-PATIENT-INTRANSITIVE-open-BENEFAC TIVE-3.ABSOLUTIVE
‘you will open it for him/her/ them’ (Hasan Basri: p.c.)

The polysynthesis found in North America is thus neither universal nor unique.

There is ample evidence that the degree of synthesis characteristic of a language can change radically over a very short period of reconstructible time. Consider Selayarese, the Austronesian language cited in (11) above. As can be seen from the verb in that example, quite a natural one in the language (Basri: p.c.), the language is polysynthetic. Yet few Austronesianists would reconstruct a highly polysynthetic parent language. Many Austronesian languages are relatively analytic, and in the more synthetic languages, the recent origins of affixes are often transparent. Furthermore, those languages with more complex morphologies do not necessarily show parallel morphological structures, a fact which suggests that their affixes are the result of independent developments.

Compare the Selayarese sentence below to a similar expression in Yapese, another Austronesian language, spoken in Micronesia. The Yapese version requires several separate words:

(12a) Selayarese (Austronesian, Indonesia):
*la-ku-pan-jamâ-yan-ko*
FUTURE-1.SING.ERGATIVE-INTRANSITIVE-work-BENEF ACTIVE-2.SING.ABSOLUTIVE
‘I will work for you.’ (Hasan Basri: p.c.)

(12b) Yapese (Austronesian, Micronesia):
*raa gu marweel ni faan ngaom*
will I work for purpose to-you
‘I will work for you.’ (Jensen 1977: 277)

The grammatical structures are very different in the two languages, but note that both the tense and the pronominal morphemes are transparently cognate. Further examination of other grammatical markers reveals more cognates, although many are no longer precisely equivalent in function in the two languages.

Similar examples of the recent development of polysynthesis can be found in many other parts of the world. In many of these cases, as in
Selayarese and Yapese, phonological resemblances between related languages are so transparent that cognates are often easy to spot by naive inspection, while grammatical structures are radically different. Since polysynthesis is neither universal in North America, nor unique to it, and since it can develop in such a short period of time, it appears that polysynthesis alone may not be a reliable indicator of deep genetic relationship.

2. Pronominal affixes

Many polysynthetic languages, like most of those cited above, exhibit bound pronominal affixes within verbs. These affixes are not simply subject 'agreement markers'. They are referential pronouns, and refer to all primary arguments of the verb (agents, patients, and/or benefactives; subjects, objects, and/or indirect objects, ergatives, absolutes, and/or datives). Pronominal affixes are typically obligatory, and appear with all verbs whether external nominal phrases are present or not.

(13) Mohawk (Iroquoian, Quebec):

\[ wa\text{-}honwa\text{-}ia\text{'i}\text{t}\text{-}is\text{á}k\text{\-}ha\text{\-'i} \]

FACTUAL-MASCULINE.PLURAL.AGENT/MASCULINE.SINGULAR.PATIENT-body-seeK-PURPOSEFUL-PUNCTUAL

'They went to look for him.' (Sonny Edwards: p.c.)

(14) Mohawk (Iroquoian, Quebec):

\[ Sok \text{ } ki \text{ } ronate\text{\-}en\text{\-}ron \]

so this MASC.PL-RECIP-friend

\[ waha\text{-}tsha\text{-}nike\text{\-'i} \]

FACTUAL-MASC.SG-fear-PUNCTUAL

'So his friend was afraid...’ (Sonny Edwards: p.c.)

The pronominal affixes are obligatory because they are the actual arguments of their verbs. Associated nominals, like the word for 'friend' in (14), are appositives to these affixes, further identifying them, but they are not necessary for grammaticality. The verbs alone constitute complete clauses in themselves. In fact, in languages of this type, clauses very often have no separate nominals at all.

Pronominal affixes appear in languages throughout North America, but they are by no means universal. Many languages have only first and
second person pronominal affixes; many others have no pronominal affixes at all, only free pronouns. One such language is Wappo, cited in (7) above. Another is Central Pomo, cited below. The free pronouns are underlined.

(15) Central Pomo (Pomoan, California):

\[
?\text{?aa} \ ?e, \ ?\text{?aa mačáats’aq’} \ ?\text{čá?yem mútu} \ ?\text{?aa} \ ?\text{údaaw}
\]

\[
\text{I COP I grandfather man-old him I a. lot}
\]

dáw?duw. Meenda mútu meen múl míhdu ?el 100 care. for so-PROG him so she talked NOM me

há?t’al.
mouth-hurt

'The man I call my grandfather, I care for him a lot,
and her talking that way to him hurt me.' (Frances Jack: p. c.)

Pronominal affixes are not only not universal in North America, they are also not limited to North America. Note the pronominal prefixes in the Turkana, Ngandi, and Selayarese examples cited earlier, and in the Ngandi below.

(16) Ngandi (Non-Pama-Nyungan, Australia):

\[
\text{ma-mulupiŋºa?-yuy}
\]
MA-smelly. tortoise ABSOLUTIVE

\[
\text{ńarma-naº-º-ni}
\]
1. PLURAL EXCLUSIVE/MA-still-eat-PAST. CONTIN.

'We used to eat smelly tortoises' (Heath 1978: 193)

There is also ample evidence that pronominal affixes can develop in a language that previously had none. The Austronesian languages cited earlier provide a good example. Selayarese now has a full set of ergative prefixes and absolutive suffix enclitics. (Ergatives refer to the agents of transitive clauses, and absolutives to the patients of transitives or the single arguments of intransitives.) Yapese has developed object suffixes, but no subject affixes.

The rapidity with which pronominal affixes can develop is illustrated by a number of Pama-Nyungan languages of Australia. Among even closely related languages, some have only free pronouns, while others have full sets of transitive and intransitive pronominal clitics or affixes. The free form sources of the modern bound forms are still transparent in most cases. Dixon (1980: 246) notes that the development of bound pronouns is concentrated in specific areas of Australia, and "this isogloss..."
often does not coincide with strong genetic boundaries”. He provides numerous examples like that below.

Most of the languages in the Yolŋu subgroup, from north-east Arnhem Land, lack bound pronouns; but these are found in two languages on the edges of the Yolŋu area. Ritharŋu, the southernmost Yolŋu language, has developed pronominal EN-clitics under areal pressure from its southerly neighbours Nunggubuyu and Ngandi (which have pronominal PREfixes); these are transparently reduced forms of the Yolŋu independent pronouns. Djinan, in the northwesterly corner of the Yolŋu region, has moved in a different direction, and developed a system of pronominal PROclitics, that can be shown to be historically related – at slightly further remove than the Ritharŋu forms – from free-form pronouns in other Yolŋu languages; this was again due to areal pressure, from the prefixing languages to the west.

In some cases, the process of fusion can be seen in the earliest stages of its development. Yallop (1977: 46) notes that “the personal pronouns of Alyawarra are independent words”, but “certain sequences of words may, through vowel elision and loss of primary stress, become phonetically indistinguishable from a single word.” It is interesting that the pronouns may still appear in any order, either proclitic or enclitic to verbs.

(17) Alyawarra (Pama-Nyungan, Australia):

Pronoun — Verb
*aths arika* or *athomika* ‘I saw’

Verb — Pronoun
*rika aths* or *rikatha* ‘I saw’

Pronoun — Pronoun — Verb
*aths nginha arayntiya* or *athanginharayntiya* ‘I’ll be seeing you’

Verb — Pronoun — Pronoun
*inpika aths rinha* or *inpikathirinha* ‘I got it’ (Yallop 1977: 46)

Breen (1981) reports on a particularly interesting phenomenon. Margany and Gunya are closely related dialects of a (Pama-Nyungan) Mari language, spoken in Queensland, Australia. They are essentially equivalent structurally, except for one feature: “Gunya has a transparent and obviously recent system of pronominal suffixes to the verb, which Margany lacks” (Breen 1981: 275). Note the pronominal suffixes in the Gunya verb below, for example.
(18) Gunya (Mari, Pama-Nyungan, Australia):
    yulbiyingiyaŋdaŋa
    chase-CONTINUING-FUTURE-1. SINGULAR-3. PLURAL-ACCUSATIVE
    ‘I’ll hunt them away’ (Breen 1981: 331)

Breen points out that the bound forms are highly transparent in origin and variable in use. The singular suffixes are identical to their free counterparts minus the initial syllable (sometimes with vocalic increment).

<table>
<thead>
<tr>
<th>Free</th>
<th>Bound</th>
</tr>
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<tbody>
<tr>
<td>1 Nominative Singular</td>
<td>ŋay</td>
</tr>
<tr>
<td>2 Nominative Singular</td>
<td>inda</td>
</tr>
<tr>
<td>2 Accusative Singular</td>
<td>inanaŋ</td>
</tr>
<tr>
<td>3 Nominative Singular</td>
<td>ŋula</td>
</tr>
<tr>
<td>3 Accusative Singular</td>
<td>ŋuŋunaŋ</td>
</tr>
</tbody>
</table>

Most non-singular free and bound forms are identical.

The pronouns have not fused at all in Margany. Compare the two sentences below.

(19 a) Gunya (Mari, Pama-Nyungan, Australia):
    wad'ayinya
    go-CONTINUING-PRESENT-1. SINGULAR

    unayinya
    lie-CONTINUING=FUTURE-1. SINGULAR
    ‘I’m going to have a sleep’ (Breen 1981: 331)

(19 b) Margany (Mari, Pama-Nyungan, Australia):
    ŋula    wabatangi
    3. SINGULAR go-CONJUNCTIVE-LOCATIVE

    ŋay    unangu
    1. SINGULAR lie-PURPOSIVE
    ‘As soon as he goes I’m going to have a sleep’ (Breen 1981: 319)

Pronominal affixes are pervasive in North America, but they are neither universal nor unique. Furthermore, they can develop over a relatively short period of time. It thus appears that the presence of pronominal affixes is not a reliable indicator of deeper genetic relationship either.
3. Incorporation

A number of languages throughout North America exhibit the phenomenon called noun incorporation, whereby a noun stem, usually referring to a patient, but sometimes to an instrument or location, is compounded with a verb stem to form a derived verb stem. Examples of incorporation can be seen in the Cree, Takelma, and Mohawk examples cited earlier. It is by no means universal throughout North America, however. Numerous languages show no incorporation at all.

Noun incorporation is also not confined to North America. Note the examples cited earlier from Ngandi (Australia) and Sora (India), as well as those below from Hixkaryana (Brazil) and Koryak (Siberia) below.

(20) Hixkaryana (Carib, Brazil):
    ry-exe-mnuk-yaha
3. SUBJECT/1. OBJECT-throat-press-NONPAST
   'he is choking me' (Derbyshire 1985: 226)

(21) Koryak (Chukotko-Kamchatkan, Siberia):
    Ms-mitq-antak
   let. me-blubber-go. after
   'Let me go for blubber' (Bogoras 1917)

There is also evidence that noun incorporation can develop over a relatively short period of time. The presence of incorporation is often not consistent within language families. Within the Mayan family, for example, certain languages have no incorporation at all, such as Ixil and Aguacatec. Some others, such as Kanjobal, Mam, and Chuj, have the beginnings of incorporation. A transitive verb and unmodified noun may be juxtaposed to indicate a conceptually unitary activity. Although they remain separate words, the verb and noun form a syntactic unit equivalent to an intransitive verb. The noun, no longer a syntactic argument of the clause, does not refer to a specific, countable entity; it simply narrows the scope of the verb semantically to an activity directed at a certain type of patient. Note that the Kanjobal verb below is grammatically intransitive, as shown by the use of an absolutive case pronoun for 'you'.

(22) Kanjobal (Mayan):
    s-at-lo-w-i
   PAST-2. ABSOLUTIVE-eat-AFFIX-AFFIX  pan
   bread
   'you bread-ate'
Compare: š-Ø-a-lo-t-oq
in-pan past-3. ABSOLUTIVE-2. ERGATIVE-eat-go-OPT
1. ERG-bread
‘you ate my bread’ (Robertson 1980)

In Yucatec, incorporation can function in a similar way, but the incorporated noun is further integrated into the host verb, usually appearing before several suffixes.

(23) Yucatec Mayan:
c’ak-če?-n-ah-en
chop-tree-ANTIPASSIVE-PERFECTIVE-1. ABSOLUTIVE
‘I wood-chopped’

Compare: t-in-c’ak-ah
COMP-1. ERGATIVE-chop-PERFECTIVE tree
c’e?
‘I chopped a tree’ (Bricker 1978)

The absence of incorporation in many Mayan languages, the transparency of the incorporated structures in the others, and the lack of relic constructions, make it clear that incorporation is a new development within this family, rather than an earlier trait that is decaying. (For more on the nature, development, and distribution of noun incorporation see Mithun 1984.)

Since noun incorporation is neither universal nor unique to North America, and since it can develop relatively rapidly over time, it cannot be assumed to be a reliable indicator of deep genetic relationship either.

4. The predominance of verbs over nouns

The predominance of verbs in natural discourse is a striking feature of many North American languages. The passage below, from a Mohawk legend, is quite typical. Three men went fishing, but had no luck. Finally, one went off by himself. (All verbs are underlined.)

(24) Mohawk (Iroquoian, Quebec):
Khiahatkáhtho? kéntsion éh latiì:ti,
there he looked fish there they body be in
‘He looked and saw fishes in there,
kentsi:io iá:ken?
fish were nice it seems
they were nice fish, they say.

*Sok wahonnehlá:ko tsi nikentsi:io.*
so it unset him so fish is so nice
He was surprised to see how nice the fish were.

*Sok wà:thlahkwe?*
so he picked up
So he picked them up,

wahshakoia?tó:ko.
he body removed from water
he scooped them up.

*Sok ionsaháhawe? tsi nón: thón:ne?*
so he took back to where they are there
So then he took them back to where

this they are friends they are two they are waiting there
his two friends were waiting.

Oh he told them so for his luck to become so good
Oh, he told them how lucky he was

wahotsiaíen:ta?ne?.
he fish got
to catch fish.’ (Sonny Edwards: p. c.)

The predominance of verbs is of course not unrelated to the three other features mentioned above. Mohawk is highly polysynthetic, but the productive morphological complexity is centered within verbs. This is typical of polysynthetic languages. Mohawk nouns may be morphologically complex, but not nearly so complex as verbs. Not only are tense and aspect specified on verbs, but a variety of adverbial distinctions are made as well. Consider the morphological structure of the first word.

*kh-i-a-h-at-káhtho-?
COINCIDENT-TRANSLOCATIVE-AORIST-MASCULINE.
SINGULAR.AGENT-SEMI.REFLEXIVE-look-PUNCTUAL*

‘he looked’ (‘all of a sudden he set his sight there’)

The coincident prefix *kh*- signals that the event was sudden and unexpected, the translocative *i*- indicates that the action was directed away from the agent, the aorist *a*- signals aorist tense, the semi-reflexive *-at-* signals middle voice, and the punctual *-s* signals punctual aspect. Verbs can carry considerable information, and the lexicon is organized to take advantage of this power. Many concepts that are rendered in Indo-European languages by nouns, adjectives, or adverbs are expressed by verbs in Mohawk.

The pronominal prefixes present in every verb eliminate the need for separate pronouns. Each verb is a grammatical predication in itself. The incorporated nouns eliminate the need for many free noun phrases. In the first line, the noun ‘fish’ is free, because it represents significant new information. Thereafter, however, the noun root for ‘fish’, *(i)tsi-*, is incorporated as in the verbs *kentsi:io*, ‘it-fish-nice. is’, *nikentsi:io* ‘so-it-fish-nice. is’, and *wahotsia:n:ta?ne?* ‘he-fish-got’. The notion ‘to have good luck’ is considered a unitary concept, so it is conveyed by a single complex verb stem: the noun *-la?sw-* ‘luck’ is incorporated into the root *-iio* ‘good, nice’:

\[
\text{n-a:-ho-te-la?sw-i:io?-st-e?} \\
\text{PARTITIVE-OPTATIVE-MASCULINE.SINGULAR.PATIENT-SEMI.REFLEXIVE-} \\
\text{luck-good-INCHOATIVE-CAUSATIVE-PUNCTUAL} \\
\text{‘his luck would become so good’}.
\]

Finally, in Mohawk, as in many polysynthetic languages, morphological verbs function syntactically not only as predicates and clauses, but also as nominals, without additional derivation or special marking. Note the word for ‘friends’:

\[
\text{ronn-at-én:ro?-} \\
\text{MASCULINE. PLURAL. PATIENT-SEMI. REFLEXIVE-be.} \\
\text{friend-DISTRIBUTIVE} \\
\text{‘they are friends to each other’} > \text{‘friends’}
\]

Morphologically, this is a well-formed stative verb. It is more often used to identify than to predicate, however: it is nearly lexicalized as a syntactic nominal. The deictic particle *ki*: ‘this/these’ preceding it in the text above strengthens the expectation that the function of the phrase will be identification.

Although many North American languages do show a preponderance of verbs like that above, many others do not. Note the Wappo and
Central Pomo passages cited above, and the Nisenan below. All are California languages, from different language families, but Wappo and Central Pomo were classified by Sapir as Hokan, and Nisenan as Penutian. (The suffix glossed NOM is the nominative case, ACC the accusative. Verbs are again underlined. Nominalization serves to subordinate, and thus form appositives.)

(25) Nisenan (Maiduan, California):
\[ \text{kapa-im k'ut'\text{-}im kile-im} \]
bear-NOM deer-NOM woman-NOM
'Bear and Deer Woman,
\[ ?epe:\text{-ki-to\text{-}im} \]
sister.in.law-relate-RECIProCAL-NOM
sisters-in-law,
\[ hi:\text{-k'oy-mukum} \quad c'i:w-i. \]
pick-away-REMOTE.PAST clover-ACC
went to pick clover long ago.
\[ ha-inhay k'ut'\text{-}im kile-im \]
and-say deer-NOM woman-NOM
And, it is said, Deer Woman,
\[ lay-pe-im \quad hi:ni-im \quad mana:-im \quad pe)n-i \]
child-have-NOM small-NOM boy-NOM two-ACC
leaving her two small boys
\[ hi?is-ti-im \]
house-stay-CAUS-NOM
at home,
\[ hi:\text{-k'oy-mukum.} \]
pick-away-REMOTE.PAST
went to gather clover.
\[ ha-inhay mi-im soka-di \quad mi-im \]
and-say the-NOM meadow-LOC the-NOM
And Bear, having killed
\[ kapa-im \quad mi-im \quad k'ut'\text{-}im \quad kile-i \]
bear-NOM the-NOM Deer-NOM woman-ACC
Deer Woman
wó:ni-ti-im
die-CAUSATIVE-NOM
in the meadow,
mik’i c’o:l-i wólo-na bo-mit’-in
its head-ACC basket-LOC throw-into
putting her head in the packing basket
c’i:w-ni wa:-t’a-in
clover-INSTR put-onto
and covering it up with clover,
tó:daw-mukun.
carry-reach-REMOTE.PAST
brought it back.’ (Smith 1977: 132–133)

A predominance of verbs is pervasive in North America, but it is neither universal nor unique. It appears that this, in itself, is also not a reliable indicator of deep genetic relationship.

5. Conclusion

Polysynthesis, pronominal affixes, incorporation, and a predominance of verbs are thus neither universal nor unique among American languages, although it is easy to understand why earlier scholars supposed they were. At the beginning of the nineteenth century, language families such as Algonquian and Iroquoian were already extensively documented and familiar to scholars. These languages do indeed share many of the structural features thought to characterize the continent as a whole. Western languages, by contrast, show considerably more variety. In fact, twenty-two of Powell’s original fifty-eight families were in California, but significantly less was known about them at the time. Furthermore, although well-educated philologists were often familiar with a variety of languages, these were usually exclusively Indo-European, occasionally enriched by Semitic or Chinese. It is not surprising that the structures found in North America should have seemed dramatic.

Even if these structures were universal, they could not be relied on as indicators of deep genetic relationship, because they can develop so rapidly. As the Selayarese, Alyawarra, Gunya, and Jacaltec examples show, they can spring into existence while phonology and lexicon remain relatively unchanged.
Of course this does not mean that languages sharing these structural features are necessarily unrelated. More interestingly, it is not even clear that these characteristics are meaningless for language classification. It could be the case, for example, that related languages can jointly inherit other structural features that create a predisposition for the development of these. Polysynthesis, bound pronouns, incorporation, and verbiness co-occur sufficiently frequently to suggest that they should not be counted as independent features. They cannot be considered reliable indicators of deep genetic relationship, however, either singly or as a group, until more is understood about their borrowability and interrelationships. The development of pronominal affixes in Australia indicates that at least this structural feature is borrowable. It could be the case that the acquisition of a characteristic like bound pronouns facilitates the development of the others. In any case, it is clear that our understanding of genetic, areal, and typological relationships have much to gain from each other, and much to lose if carried on in isolation.

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