The Algonquian Prefix is an Affix, Not a Clitic: Implications for Morphosyntax

Benjamin Bruening (University of Delaware)

rough draft, December 2, 2019; comments welcome

Abstract

The "consensus" in the literature is that the prefix that appears on independent order verbs in Algonquian languages is a pronominal clitic, usually located in CP (following Halle & Marantz 1993). I show that this prefix is an agreement affix, not a clitic, according to every diagnostic for clitics versus affixes that has ever been proposed. This conclusion is problematic for syntactic accounts of the morphology of the Algonquian verb. The issue is that the prefix always appears on the highest verbal element in the clause, while all other inflection instead goes on the *lowest* verbal element in the clause. In Passamaquoddy-Maliseet, it is evident that none of the verbal elements have moved very high, certainly not higher than projections that host modal or negative elements. The problem is then that, in order to account for the placement of the prefix, higher verbal elements have to block affixation to lower ones; but then it is impossible to get the suffixes on the lowest verbal element. I show that no existing accounts of verbal morphology based on head movement, lowering, Mirror Theory, or phrasal movement can account for the verbal morphology of Passamaquoddy-Maliseet. I propose an alternative where a complex head can be built by external merge according to the clausal hierarchy, inserted low, and then copied head-by-head as the clausal spine is built, without movement. This analysis offers a principled explanation for when morpheme order will be the mirror of the clausal order, and when it will be identical to the clausal order. It also allows a principled distinction between morphemes that are selective in their attachment and cannot be separated from their hosts, and morphemes that are not selective and can.

1   Introduction

There is a large generative literature proposing analyses of the verbal morphology of Alqonquian languages. This morphology can be quite complex, as illustrated below for Passamaquoddy-Maliseet (Eastern Alqonquian):

(1)   ma=te   **'t**-oqeci=tok-om-a-wi-wa-s-opon-il
        Neg=Emph **3**-try=hit-TransAnimate-Direct-Neg-3.Pl-Dubitative-Preterit-Obviative
        'they (proximate) may not have tried to hit him/her (obviative)'

All Algonquian languages have a series of suffixes on the verb stem, plus an agreement prefix in some contexts ('*t*- in the example above). Details of Passamaquoddy-Maliseet will be provided in section 2.1; the element to focus on here is the agreement prefix in boldface.

The agreement prefix is reconstructed to Proto-Algonquian as *ne-, ke-, we-* (Goddard 2007), indexing first person, second person, and proximate third person, respectively. This prefix appears on verbs inflected in what is called the Independent Order. Ojibwe is a fairly conservative Alqon- quian language, where the prefix is almost the same as what is reconstructed for Proto-Algonquian:

(2)   **ni**-gi:we:-iʔ-a:
        1-go.home-Caus-him
        'I make him go home' (Ojibwe; Newell & Piggott 2014: (1b))

The large generative literature on Algonquian verbal morphology referred to above cites each other for a "consensus" view according to which the prefix is a pronominal clitic (e.g., McGinnis 1995, Déchaine 1999, Brittain 2001, Richards 2004, Cook 2008, Piggott & Newell 2007, Newell & Piggott 2014, Oxford 2014). However, none of these publications gives an argument to this effect. The claim seems to have originated with Halle & Marantz (1993), who propose with little argument that the prefix is a clitic, simply because it is convenient for their analysis. The rest of the literature has followed them uncritically. Some of the above references do refer to facts, but these facts actually point in the opposite direction.

I take this as my starting point: evaluating the data regarding the prefix. I will show that all diagnostics that have been proposed to distinguish affixes from clitics (Zwicky & Pullum 1983, Kramer 2014, Preminger 2014) indicate that the Algonquian prefix is an agreement affix, and not a clitic.

Having shown this, I then go on to discuss implications, of which there are many. First, existing analyses of Algonquian verbal morphology are inadequate. Second, the prefix raises an issue of locality. The generalization concerning its placement is that it always appears on the highest element of category V. A standard analysis of such placement is that the highest V raises to the prefix, or the prefix lowers to the highest V. The prefix cannot appear on any lower element of category V because of locality: the presence of a higher V blocks affixation to a lower one. The issue that arises is that all other verbal morphology appears on the *lowest* element of category V in the clause, the main verb stem (all the suffixes in 1). This includes inflectional morphology like tense, mood, and negation that must be high in the clause, in fact demonstrably higher than the V head that bears the prefix in Passamaquoddy-Maliseet. But if tense, mood, and negation are higher than the V that bears the prefix, there is no way to get them past that V to the lower V, without losing the generalization about the placement of the prefix. I show that existing accounts of morphology that depend on head movement, lowering, local dislocation (Embick & Noyer 2001), Mirror Theory (Brody 2000), or phrasal movement (e.g., Koopman 2005) are all inadequate.

I then propose an alternative, designed to meet four desiderata. First, we need a principled account of different strengths of morpheme boundaries. We need to representationally distinguish tight morpheme boundaries from weaker ones. In (1) above, the boundaries indicated with hyphens are all strong and cannot be disrupted, but the boundary between the preverb 'try' and the verb root (indicated with "=") is weaker and can be disrupted. Second, we need a principled account of selection in morphology. In phrasal affixation accounts, where an affix attaches to an entire phrase, there is simply no way that the affix could be selective about what morpheme it is adjacent to, because it is adjacent to a phrase, not a head. I conclude that tight morpheme boundaries with strict selectional relations between adjacent morphemes could only be represented as a complex head. This leads us into an apparent paradox in Passamaquoddy-Maliseet, both because of the

prefix locality issue, and because there seem to be two zones of suffixes. In the first zone, involving valence-changing morphology, scope goes outward from the root, with morphemes further away taking scope over those closer to the root (ignoring agreement, which is scopeless). In the second zone, involving inflectional morphology like tense, mood, and negation, scope is the opposite: morphemes closer to the root take scope over morphemes further away (the order is Neg-Mod-Tense). The third desideratum, then, is to capture different linear order-scope order relations in a principled way. The fourth desideratum is to have a principled approach to the relation between the morphology of the verb and its location in the clause. As mentioned above, in Passamaquoddy-Maliseet the verb is demonstrably low, lower than the functional heads Neg, Mod, Tense that are realized as suffixes.

I propose that mirror order uniformly results from head movement in the syntax. In Passamaquoddy-Maliseet, the verb raises through a series of valence-changing heads like Appl(icative) and Re-cip(rocal) and stops below auxiliary verbs that encode aspect, tense, and modality (like the preverb 'try' in 1). These morphemes therefore appear in mirror order on the verb, with affixes farther from the root taking scope over affixes closer. Affix order that is isomorphic to scope order, in contrast, results from merging functional heads together into a complex head according to the clausal hierarchy, and then merging that complex head into the clause. In the case at hand, Tense, Mod, and Neg are merged into a complex head that is merged with the highest head in VP, so that they appear on the verb. The clause is further expanded by merging auxiliary verbs (like the preverb 'try' in 1). Once the functional inflectional layer of the clause is reached, the syntax starts copying the inflectional heads that it previously merged as a complex head. It works from the bottom up, so it first copies Tense and merges it with the clause, projecting a TP; then it copies Mod, projecting a ModP; and then it copies Neg, projecting a NegP. The result is that we see both a series of mor-phemes on the verb and standalone particles realizing Neg, Mod, and Tense high in the clause. For instance, in (1), negation is realized twice, once with the obligatorily preverbal particle *ma*, and once with the suffix *-wi* on the main verb. In the current analysis, *-wi* is the head Neg merged with Tense and Mod and merged with the highest head in VP, to which the verb moves. The particle *ma* is merged in Spec-NegP once Neg is copied high in the clause.

As for morpheme boundaries, complex heads are tightly bound and cannot be disrupted, and we see strict selection among the heads. In (1), the verb only moves as high as the edge of VP, not to the preverb 'try'. The preverb itself moves to the position of the prefix and forms a complex head with it. However, preverbs like this, although they do not form a complex head with the V and syntactically are separate from it, are very often prosodified with it. In the current analysis, the phonology simply incorporates them into a single prosodic word if they are adjacent. However, the syntax can separate them with overt material, in which case they do not form a single prosodic word. So we correctly distinguish tight morpheme boundaries from ones that can be disrupted. We also distinguish selective affixes, which form complex heads, from non-selective ones, which may be attaching phonologically to an entire phrase (like the English possessive affix *'s*).

As for morphemes on the verb and the position of the verb in the clause, it should be apparent that the position of the verb in the clause will correlate with the boundary between mirror order and isomorphic order of the morphemes. Head movement creates mirror-ordered affixes, so the verb should always occur in the position of the highest head that occurs as an affix on it in mirror order with respect to other morphemes. The verb should always be lower than any clausal heads that appear as affixes on it in isomorphic order, since these are merged with the verb in a low position, without head movement.

I begin in section 2 by applying diagnostics for affixes versus clitics to the Algonquian prefix. Section 3 discusses implications: the failure of existing analyses, and the issue of locality. My proposal is given in section 4.

2   The Prefix is an Agreement Affix, Not a Suffix

I begin by applying diagnostics for clitics versus affixes to the prefix in Algonquian languages. Such diagnostics have been proposed by Zwicky & Pullum (1983), Kramer (2014), Preminger (2014). As we will see, all of these indicate overwhelmingly that the prefix is an agreement affix, not a clitic.

Although I will be talking about Algonquian languages generally in this section, and will include a few examples from Ojibwe, the bulk of my data will come from Passamaquoddy-Maliseet. Subsequent sections will also focus exclusively on Passamaquoddy-Maliseet. I therefore start with some remarks on Passamaquoddy-Maliseet.

2.1   Remarks on Passamaquoddy-Maliseet

Passamaquoddy-Maliseet is an Eastern Algonquian language spoken in Maine (United States) and New Brunswick (Canada). For general information about the language, see Sherwood (1986), LeSourd (1993), Leavitt (1996), Francis & Leavitt (2008). Passamaquoddy-Maliseet is not as conservative as some of the central languages and has undergone significant phonological changes. The reflexes of the Proto-Algonquian prefixes *ne-*, *ke-*, *we-* have lost their vowels to become *n-, k-, '-*. The third person *we-* has also become devoiced to an /h/, written with an apostrophe. This /h/ is only pronounced through its effect on the following segment. In Passamaquoddy-Maliseet, consonants are typically voiced except in consonant clusters. The effect of the /h/ is to prevent voicing of the following consonant.

Because of phonological constraints, the prefix is sometimes not audible at all. For instance the third person prefix *'-* is not audible before sonorants. The second person prefix *k-* deletes before another /k/. However, it is usually possible to know where the prefix is, because if it were anywhere else it would be pronounced.

In what follows, I will use Passamaquoddy-Maliseet examples from texts where possible. Boundaries will be important. The writers of the texts that I use were not consistent in whether they wrote preverbs as part of the verb or not. I believe this is because preverbs can be, but do not have to be, prosodified as a single prosodic word with the verb that follows them. This is discussed in detail below. Note that no writer ever separates a prefix from its host, or a suffix from the verb. Regarding the boundary between the preverb and the verb, where the writer wrote a space, I have left it; where they did not have a space, I have inserted the symbol = to indicate a boundary that is not as strong as a morpheme boundary (I have added morpheme boundaries, as text writers do not include them). I have done the same with second-position and emphatic clitics, which the authors also sometimes wrote with a space and sometimes did not.

Example sentences that are not from texts cite the source publication. Examples of Passamaquoddy-Maliseet verbal morphology (not full sentences) come from a draft version of the verbal paradigms of Francis & Leavitt 2008 (if negative, I have added the negative and emphatic particles to the left of the verb). The published version of the verbal paradigms in Francis & Leavitt (2008)

contains numerous publishing errors, like duplicating the inverse forms as the direct on page 671. The draft version I am using is dated 1992. I have posted a PDF of this draft at http: //udel.edu/~bruening/Downloads/PassamaquoddyVerbalParadigms(1992).pdf. As an example, the example in (1) is based on paradigm 30d, though I added the preverb and the preverbal negative and emphatic particle.

All Algonquian languages have a direct-inverse voice system that is relevant to the prefix. The prefix always marks the most prominent argument: first person, second person, and proximate third person. This can be the subject or the object. If the most prominent argument (marked by the prefix) is the subject, then the verb is marked with a "direct" morpheme (glossed "Dir"). If the most prominent argument (marked by the prefix) is the object, then the verb is marked with an "inverse" morpheme (glossed "Inv"). An example pair can be found in (18a–b). If both subject and object are first and second person, then there is a marker indicating which is subject and which is object (glossed, e.g., "1Subj/2Obj"). For recent discussion of this system and its morphology, see Oxford (2019).

The transcription of Passamaquoddy-Maliseet uses the orthography in use in the Passamaquoddy community. Letters have their usual values except that o = schwa, q = [k^w], c = alveopalatal affricate, ' = initial *h* (phonetic effect is aspiration of the following stop or devoicing of *s*). Obstruents are voiced in many environments. Abbreviations: 1 = first person; 2 = second person; 12 = first person plural inclusive; 3 = third person animate proximate or unmarked; Abs = absentative; An = animate; Conj = conjunct inflection; Dir = direct voice; Dub = dubitative (a modal category); Emph = emphatic particle; Fut = future; IC= initial change, ablaut process; Inan = inanimate; Intrans = intransitive; Inv = inverse voice; N = morpheme glossed "N," used with transitive inanimate verbs, ditransitives, subordinatives, and some other contexts; Neg = negative; Obv = obviative; Pl = plural; Perf = perfect aspect; Pret = preterit (tense); Quot = quotative; Trans = transitive. "1Subj/2Obj" means a first person subject with a second person object, and so on.

With this background, we can go on to examine the prefix in Algonquian languages.

2.2 Facts Discussed by the Literature that Assumes a Clitic Analysis

Some of the literature that assumes a clitic analysis actually discusses some data, but these data all point to the prefix being an affix. For instance, Déchaine (1999: 46), Piggott & Newell (2007) discuss epenthesis between the prefix and a vowel-initial stem in Ojibwe, as in (3b).

(3) Ojibwe (Newell & Piggott 2014: (1c), (49a))

  a. ni-gi:we:-a:daga: b. ni**d**-a:gam-ose:
      1-go.home-swim   1-snowshoe-walk
      'I swim home.'   'I walk in snowshoes'

This epenthesis is unusual: Vowel hiatus in other cases is either tolerated (as in (3a) between *gi:we:-a:daga:*) or is resolved through deletion. This actually makes the prefix more like agreement than a clitic: According to Zwicky & Pullum (1983), morphophonological idiosyncrasies are more characteristic of affixed words than of clitic groups (see section 2.3).

Piggott & Newell (2007), Newell & Piggott (2014) also discuss stress assignment in Ojibwe. As they show, the prefix acts like it is part of the verb for stress assignment. Together they form a single Prosodic Word with left to right iambic parsing:

(4) Ojibwe (Newell & Piggott 2014: (49a))

    a.   nid-a:gam-ose:
           1-snowshoe-walk
           'I walk in snowshoes'

    b.   (nidá:)(gamò)(sè:)

It is therefore clear that the prefix is very tightly bound to the verb stem. Piggott & Newell (2007), Newell & Piggott (2014) start from the assumption that the prefix is a clitic, and then they have to propose special operations to incorporate the "clitic" into the verb, like an affix.

Halle & Marantz (1993: 141) and Oxford (2014: 188), as well as some others, point out in support of a clitic analysis that the prefix can be separated from verb stem, as in (5) in Passamquoddy-Maliseet:

(5)   (**K**)-<u>kisi</u> nil motewolonuwihponol-ol.
        (2)-Perf 1   curse-1Subj/2Obj
        'I've been putting a curse on you.' (Newell 1979: 16)

However, it is not accurate to say that the *prefix* can be separated from the verb. The prefix can never be separated from a verbal element. If there is a verbal element known as a preverb (underlined in the example above), then the prefix obligatorily attaches to the leftmost one. It is the *preverb* that can be separated from the lexical verb stem (here, by a freestanding object pronoun). The prefix itself can never be separated from something of category V (the verb stem, or a preverb). This category sensitivity makes it more like an affix than a clitic (see section 2.3).

To summarize, the references that cite each other for a "consensus" that the prefix is a clitic do not give any arguments to that effect. What facts they do discuss point to the prefix being an affix, not a clitic.

2.3   Diagnostics in the Literature: Zwicky and Pullum 1983

I turn now to diagnostics that have been proposed in the literature for distinguishing affixes from clitics, starting with Zwicky & Pullum (1983). Zwicky and Pullum's diagnostics are listed below:

  A. Clitics can exhibit a low degree of selection with respect to their hosts, while affixes exhibit a high degree of selection with respect to their stems.

  B. Arbitrary gaps in the set of combinations are more characteristic of affixed words than of clitic groups.

  C. Morphophonological idiosyncrasies are more characteristic of affixed words than of clitic groups.

  D. Semantic idiosyncrasies are more characteristic of affixed words than of clitic groups.

  E. Syntactic rules can affect affixed words, but cannot affect clitic groups.

  F. Clitics can attach to material already containing clitics, but affixes cannot.

Starting with selection (A), we have already seen that the Algonquian prefix is very selective. It can only attach to something of category V. This is either the verb stem itself, or a preverb. This contrasts with clitics like the English possessive *'s* and cliticized (contracted) auxiliaries, which attach to whatever is adjacent to them, regardless of category:

(6) English
   a.   the person I picked up's luggage
   b.   The ones I picked up've left already.

We can also compare the prefix in Passamaquoddy-Maliseet to clitics in that language. Passamaquoddy-Maliseet is very rich in clitics, having both second position clitics and clitics of other types (like an emphatic clitic *te* that attaches to whatever it emphasizes). The second position future clitic *oc* (allomorph *hc* after a vowel) can follow anything, including a freestanding particle, a prefix+preverb+emphatic clitic, or a prefix+preverb without an emphatic clitic:

(7)   Tokec **oc** 'cimaciw   (k)-kisi=te=**hc**   yali-topskans
      now   Fut from.now.on (2)-able=Emph=Fut around-roll
      etol-amkole-k,   (k)-kisi=**hc**   pomaws ktahkmiku-k naka 'samaqan-ok.
      IC.there-burn-InanIntransConj (2)-able=Fut live   land-Loc   and water-Loc
      'From now on you will be able to roll in the fire, you will be able to live on land and in the water.' (Mitchell 1921/1976e: 15)

In the example below, it can come before or after the freestanding particle *apc*, depending on whether that particle is first in the clause or not:

(8)   Apc=**oc**   (')-maw-on-a,   on **oc** apc skicinuw-ok
      again=Fut 3-together-TransAn-Dir.ObvP then Fut again Indian-3.Pl
      '-sankewi-mawi-ya-ni-ya.
      3-peaceful-together-go-N-3.Pl
      'He will bring them together again, and then the Indians will assemble peacefully.' (Mitchell 1921/1976d: 7)

And in the following example, it follows the entire verb, since that is what is first in the clause:

(9)   Kt-apenk-ul-oni-ya-k=**c**   yukt muwin-ewiyeya-k n-mulcess-ok.
      2-pay-1Subj/2Obj-N-2.Pl-3.Pl=Fut Dem bear-skin-3.Pl   1-mittens-3.Pl
      'I will pay you with these bearskin mittens of mine.' (Mitchell 1921/1976a: 8)

It should be noted that second position clitics can freely disrupt constituents in Passamaquoddy-Maliseet, but they can never come in between the suffixes on the verb in an example like (9). The following example shows clitics coming between a demonstrative and a head noun:[1]

(10)   [Yukk **olu**   **yaq** kotoki-k] weci   qolop-otqi-hi-htit.
       these.An Contrast Quot other-3.Pl IC.from around-out-go-3.Pl.Conj
       'The other two took off in the other direction.' (Newell 1979: 25)

---

[1]Passamaquoddy-Maliseet intransitive verbs make a dual-plural distinction. A verb marked with only the regular plural inflection is interpreted as having a dual subject; to indicate a plural, another morpheme is added closer to the stem. That is why this example is translated as 'the other two'. An example of a verb with double plural marking appears in (26).

Clitics can also never come in between the prefix and the verbal element it attaches to. If the prefix *kt-* in (9) were actually a clitic, the future clitic should follow it, since it is the first element in the clause. Instead, the prefix boundary is just as strong as the suffix boundaries, and cannot be disrupted (this example has no preverb, only the main verb).

Continuing with Zwicky and Pullum's diagnostics, they say that arbitrary gaps are more characteristic of affixes than clitics (diagnostic B). For instance, they point out that contracted negation in English has an arbitrary gap, as for most dialects there is no *amn't*. This diagnostic is not applicable to Algonquian, as the prefixes are quite regular. There are no arbitrary gaps that I know of.

There are, however, morphophonological idiosyncrasies (diagnostic C), as we have already seen. In all Algonquian languages, the prefixes have one allomorph for consonant-initial stems, and one for vowel-initial stems (described as epenthesis above). This is true in Passamaquoddy-Maliseet, too: the allomorphs are *n-, k-, '-* before stems that begin with consonant, and *nt-, kt-, 't-* before stems that begin with vowel:

(11) a. k-pektehm-on
          2-cut.all.down-Inan
          'you cut it all down' (paradigm 28)

      b. kt-uwehka-n
          2-use-Inan
          'you use it' (paradigm 29)

Unlike in Ojibwe, however, there is no phonological motivation for these allomorphs, as there is no vowel hiatus. The Passamaquoddy-Maliseet prefixes have no vowel. The two allomorphs are morphophonological, not phonological. Furthermore, there are even more idiosyncrasies. In addition to the general pattern above, there is also a handful of verbs that begin with a vowel but nevertheless use the allomorph without the /t/:

(12) k-ucem-a
      2-kiss-Dir
      'you kiss him/her' (paradigm 31a)

Morphophonological idiosyncrasies mark the prefix as an affix, then, not a clitic.

As for semantic idiosyncrasies (diagnostic D), there are none that I know of in Algonquian. The prefixes simply mark the person of one of the arguments. They are quite regular in this use.

Zwicky and Pullum's diagnostic E involves syntactic rules. Affixes can undergo syntactic rules along with their hosts, but clitics are claimed not to. As Zwicky and Pullum point out, this makes contracted negation in English more like an affix, since it can undergo subject-auxiliary inversion, but a contracted auxiliary cannot:

(13) English
      a. You shouldn't've done that.
      b. Shouldn't you have put the cake in the oven first?
      c. * Shouldn't've you put the cake in the oven first?

It is difficult to find such rules in Alqonquian, as the word order is very free. However, we could think of the separation of the preverb+prefix from the main verb stem as a movement rule affecting the preverb+prefix:

(14)   (**K**)-<u>kisi</u> nil motewolonuwihponol-ol.
         (2)-Perf 1   curse-1Subj/2Obj
         'I've been putting a curse on you.' (Newell 1979: 16)

It would be quite reasonable to propose that in (14), the preverb and prefix have moved together across a fronted object. If this is plausible, then the prefix is acting like an affix, and not like a clitic.

Zwicky and Pullum's final diagnostic (F) is the ability to attach to material already containing clitics. According to Zwicky and Pullum, clitics may do this, but affixes may not. Affixes always have to attach inside of clitics. In Passamaquoddy-Maliseet, clitics can come between a preverb and the verb stem, but never between the prefix and the preverb or verb:

(15) a.   Tokec oc 'cimaciw   (k)-<u>kisi</u>=**te**=**hc**   yali-topskans
           now   Fut from.now.on (2)-able=Emph=Fut around-roll

           etol-amkole-k,   (k)-<u>kisi</u>=**hc**   pomaws ktahkmiku-k naka
           IC.there-burn-InanIntransConj (2)-able=Fut live   land-Loc   and

           'samaqan-ok.
           water-Loc

           'From now on you will be able to roll in the fire, you will be able to live on land and in the water.' (Mitchell 1921/1976e: 15)
      b.   * k=te=hc kisi. . . , *k=oc kisi. . .

(16) a.   **Apc=oc**   (')-mawon-a,   on oc apc   skicinuw-ok
           again=Fut 3-gather-Dir.ObvP then Fut again Indian-3.Pl
           '-sankewi-mawiya-n-iya.
           3-peaceful-gather-N-3.Pl
           'He will bring them together again, and then the Indians will assemble peacefully.'
           (Mitchell 1921/1976d: 7)
      b.   * 't=oc mawon-a. . . , *'t=apc=oc mawon-a. . .

It is unclear if this is different from strict selection, however. As we already saw, the prefix is very selective and can only attach to something of category V (either a main verb or a preverb).

To summarize, all of the diagnostics from Zwicky & Pullum (1983) are either not applicable, or they clearly land the prefix on the affix side of the ledger, not the clitic side.

2.4   Diagnostics in the Literature: Kramer 2014 and Preminger 2014

More recently, Kramer (2014) and Preminger (2014) have proposed various diagnostics for telling clitics from affixes. Almost all of these also classify the prefix as an affix.

First, the prefix in Algonquian is obligatory, even with a freestanding pronoun:

(17) a. Tama **nil nt**-i?
         where 1   1-be.located
         'Where am I?' (Newell 1974: 2)

     b. qenoq   olu **kilowaw k**-peci-nomihtu-ni-ya **k**-naci-wicuhkem-i-ni-ya   nil.
         however Top 2.Pl   2-come-see-N-3.Pl   2-go.do-help-2Subj/1Obj-N-2.Pl 1
         '...still you come to see if you can help me.' (Newell 1974: line 88)

Compare Romance object clitics, which are not obligatory, and typically do not double freestanding pronouns.

A second diagnostic is the ability to index more than one argument. In Romance languages, it is possible to have more than one object clitic. In contrast, in Algonquian, the prefix can index only one argument. It can index both first and second persons, as both subjects and objects (18a–b), but if both arguments are first or second person, it cannot index them both simultaneously (18c–d):

(18) a. **n**-tok-om-a-k
         1-hit-TransAn-Dir-3.Pl
         'I hit them' (paradigm 30a)

     b. **n**-tok-om-oku-k
         1-hit-TransAn-Inv-3.Pl
         'they hit me' (paradigm 30a)

     c. (**K**)-<u>kisi</u> nil motewolonuwihponol-ol.
         (2)-Perf 1   curse-1Subj/2Obj
         'I've been putting a curse on you.' (Newell 1979: 16)

     d. * k-n-kisi, *n-k-kisi

This again makes the prefix an affix, not a clitic.

Romance object clitics also behave independently in ditransitives. It is possible to have two, one for each object, or one for the lower object in the absence of the higher object. In contrast, agreement may be limited by locality to only indexing the higher of the two objects. This is true of the prefix in Algonquian. In the inverse, it can index an internal argument (as in 18b), but with a ditransitive, it can index only the higher object:

(19)   ma=te   **'t**-oliht-a-ku-w-oni-ya-l
         Neg=Emph **3**-make-Ditrans-Inv-Neg-N-3.Pl-Obv
         'he/she/it (obviative) doesn't make it (an/inan) for **them (proximate)**' (paradigm 37b)

This also identifies the prefix as an affix, not a clitic.

Clitics may also index only certain types of arguments, for instance just specific indefinites or definites. They may also have semantic effects, for instance in inducing a specific or emphatic reading. In contrast, affixes tend to index all arguments, regardless of their semantics and without inducing any particular interpretation. The Algonquian prefix behaves like an affix in this regard: it indexes all arguments of the relevant type, and has no semantic effects. For instance, it obligatorily indexes both definite pronouns (as we have already seen) and weak indefinites, even wh-indefinites that take narrowest scope:

(20) Ma=te   **wen** '-kisi=tomh-a-wiy-il   Piyel-ol.
Neg=Emph who 3-Perf=beat-Dir-Neg-Obv P.-Obv

'No one beat Piyel.' / *'There is someone who didn't beat Piyel.' (Bruening 2007)

This diagnostic also identifies the prefix as an affix, and not a clitic.

Additionally, according to Kramer (2014) and Preminger (2014), affixes may agree in just a subset of features, whereas clitics tend to index all features. In Algonquian, the prefix agrees like an affix in just a subset of features: it indexes person and not number:

(21) a. ma=te   **'t**-oliht-a-ku-w-oni-**ya**-l
Neg=Emph **3**-make-Ditrans-Obv/3-Neg-N-**3.Pl**-Obv

'he/she/it (obviative) doesn't make it (an/inan) for **them (proximate)**' (paradigm 37b)

b. qenoq   olu kilowaw **k**-peci-nomihtu-ni-**ya k**-naci-wicuhkem-i-ni-**ya**   nil.
however Top 2.Pl   2-come-see-N-2.Pl   2-go.do-help-2Subj/1Obj-N-2.Pl 1

'...still you (Pl) come to see if you (Pl) can help me.' (Newell 1974: line 88)

The number of the agreeing argument is indexed on a suffix, instead (boldfaced in the above examples).

It should also be pointed out that the prefix behaves unlike freestanding pronouns in this respect, which index all features. For instance, second person pronouns in Passamaquoddy-Maliseet have the forms singular *kil*, inclusive first person *kilun*, and second person plural (excluding first person) *kiluwaw* (or *kilowaw*, as in 21b). If the prefix is a pronoun, as the "consensus" view maintains, it is a very odd one.

According to Kramer (2014) and Preminger (2014), clitics also tend to appear in all clause types, including in non-finite clauses and imperative clauses. In contrast, affixes may disappear, depending on the clause type (cf. Nevins 2011). The Algonquian prefix behaves like an affix in this respect: it is present only in the independent order (22a) and is absent from the conjunct order inflection (22b) and in imperatives (22c):

(22) a. Msi=te   el-ehl-ut   **'-kis-uwehka-n**.
all=Emph IC.thus-do.to-Pass.3 3-able-use-Inan

'All that has been done to him he can now use.' (Mitchell 1921/1976e: 15)

b. On   [']-kisi kpukow-a-n   piksi piyehs **ewehke-t**.
then 3-Perf sew-3/Obv-N pig   hair   IC.use-3Conj

'[Then] He sews him up using a pig's hair.' (Anonymous 1974: 9)

c. **Wehk-eq**!
use-2.PlImp

'Use it!' (2nd person plural, paradigm 29)

Compare Romance object clitics again: they appear in finite clauses, non-finite clauses, imperatives, all tenses, etc. (though their position famously varies by clause type).

All of the above diagnostics treat the Algonquian prefix as an affix, not a clitic. Kramer (2014) and Preminger (2014) propose three other diagnostics, but these are not applicable to Algonquian. First, it is not possible to set up a situation where agreement is broken, so we cannot check if

there is a default (according to Preminger 2009, 2014, clitics just disappear, while agreement is realized as a default). Second, since the prefix is obligatory, it is not possible to see if it affects binding relationships (clitics are supposed to be able to circumvent weak crossover). The third and final diagnostic is the ability to appear in a passive or reflexive verb. According to Kramer (2014), clitics can appear in passive/reflexive forms, but (object) agreement typically will not. This is not really a valid diagnostic for Algonquian, because the prefixes can index either the subject or the object. In passive forms (typically referred to as "indefinite subject" constructions), first and second person logical objects will be indexed by the prefix, but the prefix disappears with a third person logical object. This is the pattern with intransitives generally. I view this diagnostic as simply not applicable in Algonquian languages.

2.5   Summary

All morphosyntactic diagnostics for clitics versus affixes are either not informative or they clearly classify the Algonquian prefix as an affix, not a clitic. Phonologically, the prefix behaves like an affix that is very tightly bound to its host. I conclude that the prefix is a canonical affix, and is not a clitic in any sense. In particular, it does not behave like the things that are clearly clitics in Passamaquoddy-Maliseet.

3   Implications

Having established that the prefix in Algonquian languages is an agreement affix, not a clitic, I now go on to discuss the implications of this finding. First, it is problematic for existing analyses. Second, it raises a troubling issue of locality, which then sets the stage for my own proposal.

3.1   Existing Analyses

As noted in the introduction, a large literature on Algonquian languages has proposed analyses of their verbal morphosyntax that assumes that the prefix is a clitic in a very high syntactic position, typically CP. A great many of these also propose that the verb raises to a similarly high position, often C. This analysis seems to have started with Halle & Marantz (1993), who propose that the verb in Potawatomi raises through a series of heads all the way to C. The prefix is a pronominal clitic in CP that cliticizes onto the verb (or some other element). McGinnis (1995) follows this analysis, as do Richards (2004) and Piggott & Newell (2007), Newell & Piggott (2014). Déchaine (1999) considers not just the prefix a clitic, but also some of the suffixes. Rather than head movement, she proposes phrasal movement of the verb stem to Spec-PersP, which is right below CP where the prefix is located. Brittain (2001) treats the prefix as a clitic attached to the highest head in the clause, to which the verb moves (the identity of this head varies depending on the arguments). Cook (2008) adopts the view that the prefix is a pronominal clitic in CP, but does not appear to adopt verb raising to C. Similarly, Oxford (2014) also treats the prefix as a clitic, but remains agnostic about the position of the verb.

   All of these analyses are untenable, as they all treat the prefix as a pronominal clitic. We have seen above that this is not correct. All of the above theories will have to be reworked in such a way that the prefix can be analyzed as an agreement affix. It is not clear to what extent this is possible.

Rather than discussing this issue in depth, however, I will instead turn to a second problem that will be important in what follows. The problem arises for those theories that also have movement of the verb to a very high position. The problem is that it is evident in Passamaquoddy-Maliseet that the verb does *not* move to a high position, and in fact remains quite low.

In Passamaquoddy-Maliseet, the verb could not be in C. Passamaquoddy-Maliseet is a wh-movement language, with wh-words moving to Spec-CP. If the verb were in C, then a fronted wh-phrase and the verb should always be adjacent. However, numerous things can and even must come in between them. Negation in the form of a freestanding particle must come in between them. XPs (other arguments, for instance), can come in between the wh-phrase and the verb, on either side of negation:

(23) a.   Tama ma=te   wen wikuwaci-toli-hpi-w?
            where Neg=Emph who enjoy-there-eat.3-Neg

            'Where does no one like to eat?' (Bruening 2001: 148, (347b))

      b.   Wen-il   tehpu niktok   nemiy-a-htic-il?
            who-Obv only   those.An IC.see-Dir-3.Pl.Conj-Obv

            'Who did only they see?' (Bruening 2001: 226, (579b))

Note that while *tehpu niktok* might be a constituent in (23b), *ma=te* and *wen* do not form a constituent in (23a), they are separate. *Ma=te* is sentential negation, while *wen* is an indefinite argument. The wh-phrase in Spec-CP and the verb are therefore separated by at least two elements in (23a), one of which is sentential negation.

A freestanding argument pronoun can also come in between a wh-phrase in Spec-CP and the verb:

(24)   Tama nil nt-i?
        where 1   1-be.located

        'Where am I?' (Newell 1974: 2)

The freestanding pronoun is therefore not left-dislocated, since left-dislocated elements must precede wh-phrases (Bruening 2001). It must be the argument of the verb, and the verb could not have moved as high as C. (The fact that the prefix is obligatory even with an overt pronoun indicates that it is agreement and not a clitic, as we saw above.)

Even outside of wh-questions, the verb obligatorily follows negation, and other elements can come in between negation and the verb, as in the following example:

(25)   Kat op   keq kt-ol-essi-w.
        Neg would what 2-thus-happen.to-Neg

        'Nothing shall happen to you.' (Mitchell 1921/1976c: 11)

The modal *op* obligatorily precedes the verb but follows Neg when it is present. The verb could not even be moving as high as a Mod(al) or Neg(ative) head, then. Moreover, preverbs, which encode aspectual and root modal categories, obligatorily precede the main verb but can be separated from it:

(26)   <u>Kisi</u> yaq   ona **skitapew-ehl-os-ultu-wok**   tan te
        able Quot also man-change.form-Refl-Plural-3.Pl WH Emph
        etuci-woli-tahatomu-htit.
        IC.X.time-good-think.TI-3.PlConj
        'They could, it is said, change themselves into men whenever it pleased them.' (Mitchell
        1921/1976c: 16)

This example has a root modal encoding ability (underlined). Such root modals are generally thought to be quite low (e.g., Cinque 1999). Since the root modal is separated from the main verb (boldfaced), they do not seem to form a complex head. This means that the verb has not undergone movement to the root modal. This puts the verb quite low, lower even than some of the lowest functional categories, like root modals. In section 4.1, I will investigate the order of functional elements in more detail. For now, the point is simply that the verb has clearly not raised very high in Passamaquoddy-Maliseet. This means that most existing analyses of Alqonquian verbal morphosyntax cannot be maintained. They have the prefix as a pronominal clitic, which we have seen is false, and they also posit movement of the verb to a high position, which we have now also seen is incorrect, at least for Passamaquoddy-Maliseet.

I will spend no more time on existing analyses, and will instead turn to a general issue that the facts of Passamaquoddy-Maliseet raise for accounts of morphosyntax.

3.2   Locality

The Algonquian prefix raises an issue with locality, especially for head movement accounts of verbal morphology. Let me begin by establishing the generalization regarding the placement of the prefix.

The prefix is always leftmost in the verb stem. If there is no preverb, it goes on the verb stem itself:

(27)   Tama nil **nt-i**?
        where 1   1-be.located
        'Where am I?' (Newell 1974: 2)

If there is a preverb, it goes on the leftmost one. The following example illustrates with one preverb:

(28)   Yaka   Kollu **'-peci**-ya-n;
        that.Abs Kollu 3-come-go-N
        'Now Kollu himself comes' (Francis and Leavitt 1995: line 277)

The following example shows three preverbs:

(29)   Keka   te   **(')-'kihka saputiy-al**-okot-om-on   khakon,
        almost Emph (3)-all   through-around-eat-TransInan-N door
        'He had just about gnawed his way completely through the door...' (Gabriel 1979: 32)

As already shown, this distribution is very unlike clitics in Passamaquoddy-Maliseet. Second position clitics can follow anything (whatever is first), and emphatic clitics can also attach to anything. The prefix can only attach to a verb or preverb, and only the first one.

This is just like the distribution of finite inflection in European languages: Tense/agreement inflection in European languages always goes on the highest verb in clause. Auxiliary verbs in European languages are part of a larger category, 'verb' (V). The generalization is that finite inflection goes on the highest V in European languages. Analogously, we should conclude that preverbs in Passamaquoddy-Maliseet are part of a larger category, 'verb' (V). The generalization is then that the prefix goes on the highest element of category V in the clause.

It should be noted that there is another element that obeys the same generalization. This is *initial change*, an ablaut process that occurs in some conjunct forms (like relative clauses, some adjunct clauses). Initial change affects the first vowel of the verb. This is the first vowel of the verb stem itself if there is no preverb (30a), but the first vowel of the first preverb if there is one (or more), as in (30b):

(30) a. 'T-olintuwakon **ewehke-t**, msi=te '-kisi=qolopehl-a.
3-song IC.use-3Conj all=Emph 3-Perf=transform-3Subj.ObvPObj

'With his song, he transforms them all.' (Mitchell 1921/1976b: line 65)

b. **Eli**-qolop-essi-li-t w-ikuwoss-ol, kotama=te wen-il
IC.thus-around-turn-Obv-3Conj 3-mother-Obv Neg=Emph who-Obv
(')-nomiy-a-wiy-il.
3-see-3Subj-Neg-Obv

'When his mother turns, she sees no one.' (Mitchell 1921/1976f: line 60)

Initial change is in complementary distribution with the agreement prefix. Both occur on the highest verb in the clause. There are therefore multiple processes in Algonquian languages that treat preverbs as category V.

Now, we have already seen that preverbs can be separated from the rest of the verb. They can be separated by clitic elements, both emphatic clitics like *te* and second position clitics like *yaq* and *oc* (allomorph *hc*; the preverb is underlined, the rest of the verb stem boldfaced):

(31) a. Yuhtol piyemi te **woli-nuw-a-c-il** not te tomk
this.Obv most Emph good-find.looks-Dir-3Conj-Obv that.3 Emph first
tetomihk-ahc-il;
IC.catch.up.to-3InvConj-Obv

'The one he thinks is prettiest catches up with him first.' (Francis & Leavitt 1995: line 51)

b. Kisi yaq ona **skitapew-ehl-os-ultu-wok** tan te
able Quot also man-change.form-Refl-Plural-3.Pl WH Emph
etuci-woli-tahat-om-uhtit.
IC.X.time-good-think-TransInan-3.PlConj

'They could, it is said, change themselves into men whenever it pleased them.' (Mitchell 1921/1976c: 16)

    c.   Ipocol   msi=te   k-nacitaham-ku-k skinuhsis-ok   yut, <u>kt-oqeci=hc</u>
          because all=Emph 2-hate-Inv-3.Pl   young.man-3.Pl here <u>2-try=Fut</u>

          nehpuhu-ku-k.
          kill-Inv-3.Pl

          'Since all the young men here hate you, they will try to kill you.' (Mitchell 1921/1976e: 12)

They can also be separated by NPs, in this case an object pronoun:

(32)   (K)-<u>kisi</u> nil **motewolonuwihponol-ol**.
        (2)-Perf 1   curse-1Subj/2Obj

        'I've been putting a curse on you.' (Newell 1979: 16)

   It would therefore be quite natural to consider preverbs a type of auxiliary verb, taking the main verb as its complement. The preverb and the main verb never form a complex head together and can therefore be separated by overt material:

(33)

```
              VP
            /    \
          V       VP
       preverb   /  \
                V    XP
            main.verb
```
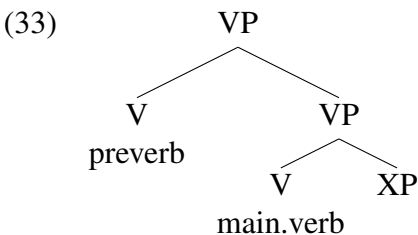
   The issue that this raises comes from the fact that all other inflection goes on the main verb, not the highest verb in the clause like the prefix. In (31b), repeated below, all the inflection other than the prefix occurs as suffixes on the verb (since this verb is intransitive with a third person subject, there is no prefix):

(34)   <u>Kisi</u> yaq   ona **skitapew-ehl-os-ultu-wok**   tan te
        able Quot also man-change.form-Refl-Plural-3.Pl WH Emph

        etuci-woli-tahat-om-uhtit.
        IC.X.time-good-think-TransInan-3.Pl.Conj

        'They could, it is said, change themselves into men whenever it pleased them.' (Mitchell 1921/1976c: 16)

(35) shows close to the maximal number of inflectional suffixes in Passamaquoddy-Maliseet:[2]

(35)   ma=te   't-oqeci <u>tok</u>-**om-a-wi-wa-s-opon-il**
        Neg=Emph 3-try   hit-TransAn-Dir-Neg-3.Pl-Dub-Pret-Obv

        'they (proximate) may not have tried to hit him/her (obviative)' (paradigm 30d)

---

[2]The only one missing is a morpheme that occurs between Neg and the central agreement marker, here 3.Pl. I have been glossing this morpheme as 'N'. It appears in various different contexts (hence the lack of a gloss), but in many of them it cannot co-occur with the final agreement suffix, so it is difficult to illustrate all of the possible morphemes in a single form. There are also various derivational morphemes that can occur before the Direct morpheme; see section 4.1.

The inflectional suffixes include various agreement morphemes, but also negation (Neg), a modal category (Dubitative), and a tense marker (Preterit).

The issue now is that, in order to account for the generalization that the prefix always appears on the highest element of category V, one would typically say either that the highest element of category V must raise to concatenate with the prefix, or the prefix must lower to concatenate with the highest element of category V. Importantly, a higher element of category V must block the prefix from attaching to a lower element of category V, otherwise it would not always appear on the highest V.
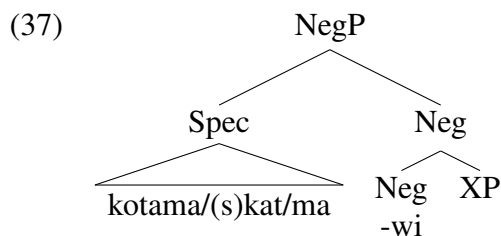
But now the question is, how do the suffixes get on the main verb? To account for the placement of the prefix, we have to say that a higher element of category V blocks movement of the main verb, or lowering to the main verb. But then we should expect that a higher element of category V would also block movement of the main verb to the suffixes, or lowering of the suffixes to the main verb.

Consider in particular negation. We have already seen that neither a preverb nor the main verb raise as high as Neg in Passamaquoddy-Maliseet, since both obligatorily follow the freestanding Neg particle (underlined), and in fact other elements can come in between Neg and the first verb (intervening elements boldfaced):

(36) a. Neke   tuciw   Pokomk <u>kotama</u> kisi=pihce-hom-u.
          then.Past right.away Pokomk Neg   able-far-swim-3.Neg

          'At that time, Pokomk could not swim far.' (Mitchell 1921/1976f: line 33)

      b. <u>kotama</u>=te **wen-il**   (')-nomiy-a-wiy-il.
          Neg=Emph who-Obv (3)-see-3Subj-Neg-Obv

          'she sees no one.' (Mitchell 1921/1976f: line 60)

      c. Nil <u>kat</u> **op**   **apc nit** n-toli=komoqi-w-on,
          1   Neg would again there 1-there-dive-Neg-N

          'I'm not going down there again,' (Newell 1979: line 15)

Note in particular (36c), where it is apparent that the order is Neg Modal (*op*) . . . V.

Negation is marked twice in Passamaquoddy-Maliseet, once with a freestanding particle *kotama/kat/skat/ma* and once with a suffix on the verb. Both are obligatory. The issue is how the suffix got on the main verb, past any preverb. A common analysis of two negative markers is to propose that the freestanding one is in Spec-NegP, while a head morpheme is Neg^0 (e.g., Pollock 1989):

(37)

```
                    NegP
              _____|_____
            Spec          Neg
          ___|___        __|__
   kotama/(s)kat/ma    Neg   XP
                       -wi
```
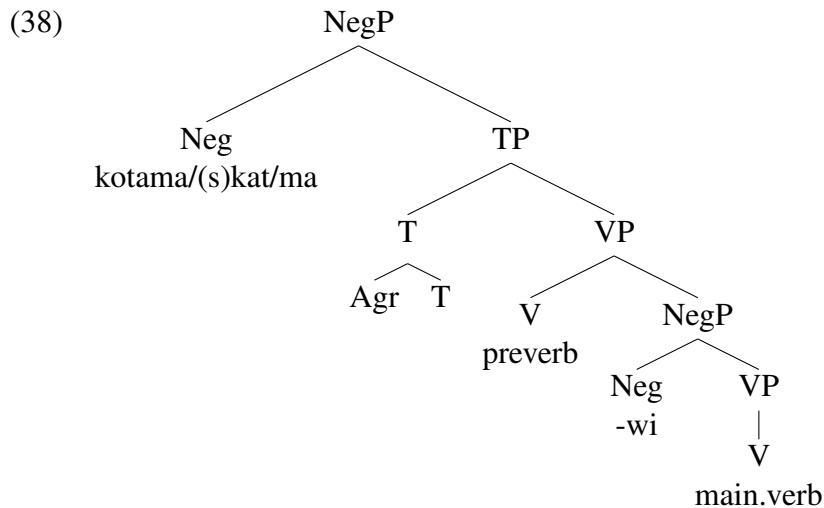
If V raises to Neg, we get *particle-V* order, where they must be adjacent. If V raises past Neg, we get the order *V-(X-Y. . .)-particle*. There is no way to get the order *particle-(X-Y. . .)-V* without lowering of Neg to V. But lowering should only put the Neg head on the highest preverb, it should

17

be unable to lower it past any preverb to the main verb. In (36c), for instance, the negative suffix should have to appear on the preverb *toli*, not on the main verb.

This is the problem raised by the prefix. In order to account for the distribution of the prefix, we have to say that preverbs are verbs and block raising of other verbs past them, or lowering of heads past them. But then there is no way to get the suffixes on the main verb. This is a problem for all accounts of verbal morphology that are based on head movement. The intervening preverb should block not just head movement and hierarchical lowering, but it should also block linear dislocation (Embick & Noyer 2001), since it intervenes linearly between the position of negation and the main verb where the suffix appears. The facts are also incompatible with Mirror Theory (Brody 2000, Adger et al. 2009, Svenonius 2016), which requires contiguity between the heads that can be pronounced together in one of the head positions. Again the preverb disrupts contiguity between heads like Neg and the position of the verb where Neg is realized. The facts are also incompatible with head movement in the post-syntactic morphology, as in Harizanov & Gribanova 2019 (what they call *amalgamation*): again head movement of the verb stem should be blocked by the preverb.

One could try to get around the problem by proposing that there are two NegPs in the clause. One, which houses the preverbal particle, comes above the highest V; the other (the suffix) comes right above the main V, below any preverbs:

(38)

```
                         NegP
                   _____|_____
                  |             |
                 Neg            TP
          kotama/(s)kat/ma    __|__
                            |     |
                            T     VP
                          __|__  __|____
                         |    | |       |
                        Agr   T V      NegP
                             preverb  __|__
                                     |     |
                                    Neg    VP
                                    -wi    |
                                           V
                                       main.verb
```

This might be a reasonable analysis of negation (assuming it can be wedded with a semantic analysis), but to generalize to other categories, it would require further duplication of functional projections. The main verb can also have modal and tense suffixes, as we have already seen:

(39)   ma=te   't-oqeci=tok-om-a-wi-wa-**s-opon**-il
        Neg=Emph 3-try=hit-TransAn-Dir-Neg-3.Pl-**Dub-Pret**-Obv
        'they (proximate) may not have tried to hit him/her (obviative)'

These take scope over the preverb 'try' (so does negation). We also saw that there is a preverbal modal, too, which follows negation but precedes the verb:

(40)   Nil <u>kat</u> **op**   apc   nit   n-toli=komoqi-w-on,
        1   Neg would again there 1-there-dive-Neg-N
        'I'm not going down there again,' (Newell 1979: line 15)

18

To account for the modal and tense suffixes, we would again have to duplicate categories, so that there are two TPs and two ModPs, one above the preverb and one between the preverb and the main verb. Only the higher ones would be contentful (to account for scope). Such an analysis would be completely ad hoc. The only purpose to the lower projections would be to get the suffixes on the lowest verb. I therefore reject such an analysis.
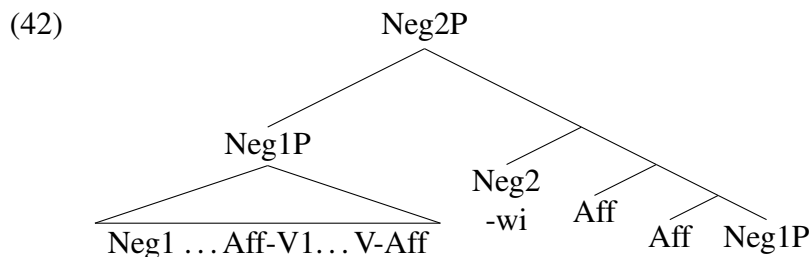
Another alternative would be to propose a low NegP, but with movement of Spec-NegP (the particle) to a preverbal position (cf. Pietraszko 2018):

(41)

```
                       TP
                      /  \
                    /      \
                  XP₁        T
            kotama/(s)kat/ma / \
                           /     \
                          T       VP
                         / \     /  \
                       Agr  T   V     NegP
                            preverb  /   \
                                   XP₁     Neg
                                          /   \
                                        Neg    VP
                                        -wi    |
                                               V
```
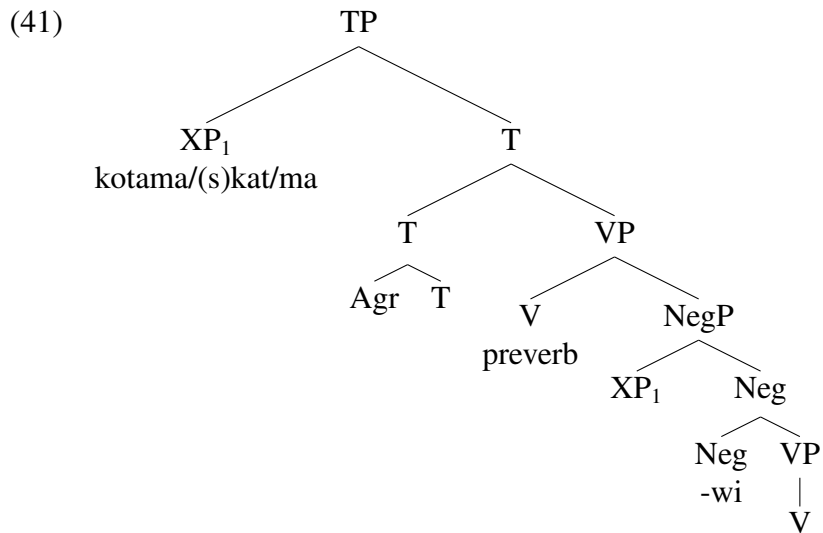
This might be a plausible analysis of negation again, but we would have to propose the same thing for T and Mod as well. TP and ModP projections would have to be low in Passamaquoddy-Maliseet, below any preverb, and then parts of them would have to move to a high scope position. This flies in the face of cross-linguistic facts regarding clause structure, where TP and ModP occur fairly high in the clause, definitely above any auxiliary verbs. I therefore reject this type of approach, as well.

Finally, we should consider a phrasal movement analysis for getting the suffixes on the verb (e.g., Koopman 2005). There are many, many ways of implementing a phrasal movement analysis. The following attempt comes from an anonymous reviewer. This reviewer suggests two NegPs again, where this time the lower NegP (Neg1P) houses the preverbal particle and the higher NegP (Neg2P) houses the suffix. The phrase Neg1P moves to Spec-Neg2P, where it immediately precedes the head Neg2, which suffixes onto the phrase in its specifier:

(42)

```
                       Neg2P
                      /     \
                    /         \
                 Neg1P          \
                /    \        Neg2   Aff
               /      \       -wi   /  \
        Neg1 …Aff-V1… V-Aff      Aff   Neg1P
```

The general problem with phrasal movement accounts (not just this particular one) is that there is no way to enforce strict selection between the affix and what it attaches to. Phrasal affix accounts are justified for cases like the English possessive *-'s* or contracted auxiliaries precisely because

they are not selective. The English possessive *-'s* will attach to any category, including verbs, prepositions, nouns, adjectives, and so on, whatever is immediately to its left. The same is true of a contracted auxiliary. If what is to its left moves away, both of these will simply attach to what is now adjacent to it. For instance, a contracted auxiliary will contract onto the complementizer in a relative clause when the subject extracts:

(43)   a.   The ferry'd left already.
        b.   the ferry that'd left already

Davis (2018) shows that some speakers of English allow a possessor to extract; in such a case, the possessive *'s* also attaches to whatever it is now adjacent to, for instance a higher verb:

(44)   % Who do you think's hat is the biggest?

For English possessive *'s* and auxiliary contraction, then, attachment to a phrase seems to be correct: the affix/clitic is not selective about what it is adjacent to, and if what it is adjacent to moves away, it simply attaches to the next closest thing. This is what we should expect from a representation like that in (42). In such a representation, there is simply no way to ensure that the negative suffix (Neg2) always attaches to a certain category. Selection is strictly local. Neg2 is local only to the entire phrase. It should be unable to see into the phrase to check whether the head it is adjacent to is the right one. The fact is that the negative suffix in Passamaquoddy-Maliseet is extremely selective: it only attaches outside of the theme sign (marking direct vs inverse) with transitive animate verbs and the final with all other verbs (since they do not have the theme sign). In the representation in (42), there is no way to ensure this. There would have to be a grand conspiracy that requires exactly the material that follows the verb to move out of the fronted phrase, such that the final thing within that phrase ends up being the correct affix. Without such a conspiracy of requirements, the object argument, for instance, could be the last thing in the fronted phrase. So could a freestanding particle.

Even more problematically, we would expect the emphatic clitic *te* to be able to attach to the fronted phrase in a representation like that in (42). This clitic can attach to basically anything. It can and frequently does attach to the negative particle, for instance (e.g., in 36b), which could naturally be analyzed as occurring in a Spec-NegP. It can attach to a fronted phrase, for instance the fronted wh-element *tan* and the fronted inanimate demonstrative pronoun *nit* in the following example:

(45)   Tan **te**   keq wen-il   yah-a-htit,   nit   **te**=hc
        WH Emph what who-Obv tell-Dir-3.PlConj this.Inan Emph=Fut
        eley-ik
        IC.happen-InanIntransConj
        '[Whatever they told someone, that thing would happen]' (Newell 1979: 3)

In the representation in (42), there is no way to stop the emphatic clitic from coming before the Neg suffix, then. We should expect it to be able to, since it can attach to fronted phrases. The fact is that it cannot. The emphatic clitic can never disrupt the suffixes on the verb, or the prefix-preverb combination.

What we want is a principled approach to affixes and the boundaries between them. Given that selection is strictly local, if an affix attaches to a whole phrase, it could not be selective about what

it is adjacent to, since it cannot see inside the phrase that it attaches to. If an affix is selective about what it is adjacent to, then it could not be attaching to a phrase. We need a different representation for affixes that are selective and cannot be separated from their hosts (for instance, a complex head).

I therefore reject phrasal movement approaches as being unable to account for the strict selection and tight morpheme boundaries that we see between the suffixes in Passamaquoddy-Maliseet. Affixation to a phrase is only appropriate where there is no strict selection and there is potential separability, as we see with the English possessive *'s*. It is therefore inappropriate as an analysis of any of the suffixes in Passamaquoddy-Maliseet.

3.3 Summary

To summarize this section, the prefix raises a host of analytical problems. First, existing analyses are inadequate, since they incorrectly treat the prefix as a pronominal clitic, and many of them posit movement of the verb to a position high in the clause. The verb in Passamaquoddy-Maliseet does not move high at all. At the same time, though, numerous suffixes appear on it that correspond to high functional projections. In order to account for the placement of the prefix, we have to say that preverbs are category V and block attachment of the prefix to lower Vs; but then they should also block attachment of the suffixes to the main verb.

4 Proposal

In this section, I propose an account of the apparent paradox we have been led into. My analysis attempts to meet four desiderata: (1) We need a principled account of different strengths of morpheme boundaries, with different representations for morphemes that can be separated from their hosts and ones that cannot. (2) We need a principled account of strict selection among morphemes. Strict selection is incompatible with attachment to a phrase. (3) We need a principled approach to the relation between morpheme order and scope order. (4) We need a principled approach to the relation between the morphology of the verb and its position in the clause.

I start by examining the relation between morpheme order and scope order in Passamaquoddy-Maliseet, and then I lay out my proposal.

4.1 Scope and Morpheme Order

I start by looking at the order of morphemes in the Passamaquoddy-Maliseet verb, compared to their scope order. I will ignore agreement, since agreement does not really take scope, and many current proposals simply adjoin Agr morphemes where they are needed (and this is the approach I will adopt in section 4.3). I will also ignore the theme sign (marking direct and inverse), since I consider it a type of agreement (see Oxford 2019).

First, beginning with the clause, we see a clear order before the verb in Passamaquoddy-Maliseet. Negation comes before a modal particle:

(46)   Nil **kat op**   apc   nit   n-toli=komoqi-w-on, tan   te
         1   Neg would again there 1-there-dive-Neg-N   WH Emph

kehsi-mil-iyeq   man.
X.much-give-2.PlSubj/1ObjConj money

'I'm not going down there again, no matter how much money you give me!' (Mitchell 1979: 20)

Other modals and tense/aspect markers are preverbs. Negation and the preverbal modal *op* seen above obligatorily precede all of these. We can see negation preceding the ability modal in (47) and various aspectual preverbs in (48–49):

(47)   Neke   tuciw   Pokomk **kotama kisi**=pihce-hom-u.
       then.Past right.away Pokomk Neg   able-far-swim-3.Neg

       'At that time, Pokomk could not swim far.' (Mitchell 1921/1976f: line 33)

(48)   Temonuk apc   (k)-kotuhpu-lti-pon   **skat** wen **naci**=kotunke-hq.
       later   again (2)-be.hungry-Plural-2.Pl Neg who go=hunt-3ConjNeg

       'We'll all starve if someone doesn't go hunting.' (Newell 1974: line 3)

(49)   Wot olu yaq Kci Anuwit, **ma** te **coni** posonut-ehke-w.
       Dem Top Quot great Hannah, Neg TE stop basket-make-Neg

       'Old Hannah didn't even stop working on her basket.' (Newell 1979: 13)

This give us the order Neg Mod T/Asp/Mod$_{root}$ in the clause (an order that is familiar from other languages and should come as no surprise). (Cf. Cook 2008: section 2.2.1 on the ordering of preverbs in Plains Cree.)

Turning to the order of morphemes on the verb, there seem to be two different "zones" of suffixes. First, derivational morphemes (valence-changing morphemes) take scope such that morphemes farther from the root take scope over morphemes closer to the root. In Passamaquoddy-Maliseet, all verbs end in what is called a *final*, which indicates whether the verb is transitive or intransitive, and it also agrees with one of the arguments (the object if transitive, subject if intransitive). In (50a) and (50b), the final *-om-* indicates that the verb is transitive with an inanimate object. However, in (50a), another morpheme has been added, an Appl(icative), which adds an additional argument, something like a benefactive. In (50b), a Recip(rocal) morpheme is added on top of that, which de-ditransitivizes the verb back to a simple transitive:

(50)   (Bruening 2006: 16, (44))

       a.   Pil '-kisi=koln-**om-uw**-a-n-ol   Maliw-ol (')-motqapiy-il.
            Bill 3-Perf=hold-**TransInan**-**Appl**-Dir-N-InanP Mary-Obv 3-bag-InanP

            'Bill held Mary's bags for her.'

       b.   Pil naka Mali '-koln-**om-aw-ti**-ni-ya-l   (')-motqapiyi-wa-l.
            Bill and Mary 3-hold-**TransInan-Appl-Recip**-N-3.Pl-InanP 3-bag-3.Pl-InanP

            'Bill and Mary are holding their bags for each other.'

In examples like these we can clearly see that morphemes that come further from the root operate on and take scope over morphemes that occur closer to the root. It is the outermost derivational affix that determines the properties of the verb.

However, when we look at inflectional affixes, we find the opposite order. Passamaquoddy-Maliseet has three possible inflectional affixes, Neg, Mod, and Tense. They come in that order:

22

(51) ma=te   't-oqeci=tok-om-a-**wi**-wa-**s-opon**-il
      Neg=Emph 3-try=hit-TranAn-Direct-**Neg**-3.Pl-**Dub-Pret**-Obviative
      'they (proximate) may not have tried to hit him/her (obviative)'

This linear order is isomorphic to the scope order, and the order that we see in the clause, before the verb (above). Neg takes scope over Mod which takes scope over Tense. The order is not the mirror order that we see with the derivational affixes in (50b).

There are therefore two zones of suffixes in the Passamaquoddy-Maliseet verb, an inner zone with mirror scope order, and an outer zone with isomorphic scope order. The two zones can be characterized as derivational (or valence-changing) versus inflectional morphology. Their differing order is a puzzling state of affairs which requires an explanation. We also need to explain how the inflectional affixes get on the verb, when the verb clearly does not move very high in the clause in Passamaquoddy-Maliseet, and in fact the same inflectional categories can occur as freestanding elements higher than the verb (negation in particular, which occurs twice).
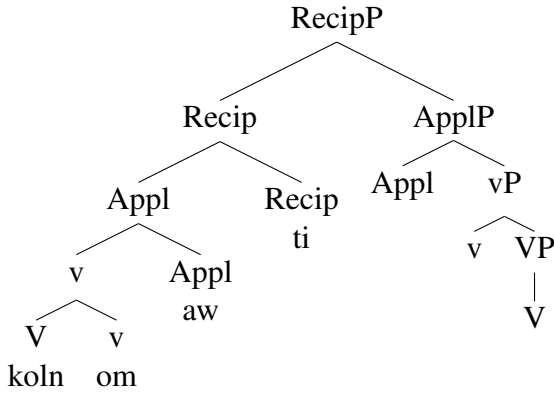
4.2 Proposal

In the kind of theory of morphosyntax that I assume, functional heads both head projections in the clause, and they may occur as morphemes on the verb. This means that there are two things the syntax needs to do with functional heads. First, they need to be merged into a clause in a designated order, projecting a phrase such that each takes a complement and (potentially) a specifier. I assume that the syntax does this in every language, including isolating languages like Mandarin Chinese. Second, in some languages, those same functional heads may be assembled into a complex head to be realized as a morphological object. Logically, there are two orders in which the syntax can perform these two tasks. The first is to first merge them into the clause in the designated order, each projecting a phrase, and then put them together into a complex head. The mechanism for doing things in this order is head movement, I assume. The second is to combine the two tasks in the opposite order: start by assembling the functional heads into a complex head, merge that complex head into the syntax, and then re-use those heads and merge them into the clause in the designated order, each projecting a phrase.

This is my proposal: these two orders of derivation are the only two ways to assemble complex heads. Each results in a different order. Mirror order is the result of head movement, after the heads have been merged in the syntax. In the inner zone of suffixes in Passamaquoddy-Maliseet, this is how the morphemes are assembled. The syntax merges a v (the final), Appl, and Recip, each projecting a phrase (ignoring arguments for now), and then the V moves via head movement through each head to Recip:

(52) Pil naka Mali '-koln-**om-aw-ti**-ni-ya-l   (')-motqapiyi-wa-l.
      Bill and Mary 3-hold-**TransInan-Appl-Recip**-N-3.Pl-InanP 3-bag-3.Pl-InanP
      'Bill and Mary are holding their bags for each other.'

23

(53)

```
                        RecipP
                    ┌──────┴──────┐
                  Recip         ApplP
              ┌─────┴─────┐    ┌──┴──┐
            Appl        Recip Appl   vP
          ┌──┴──┐        ti        ┌─┴─┐
          v    Appl               v   VP
        ┌─┴─┐   aw                    │
        V   v                         V
      koln  om
```

This manner of composition should be familiar. It is subject to locality (the head movement constraint) and results in the verb being pronounced in the position of Recip.
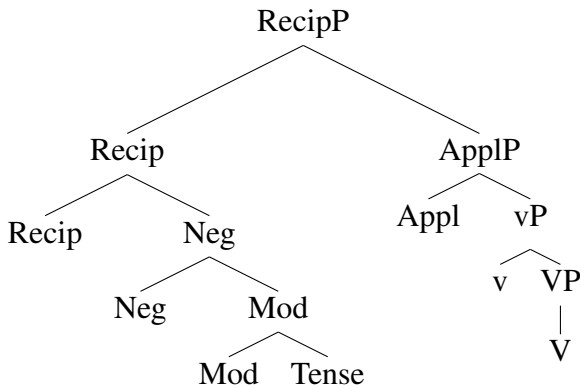
As for isomorphic scope order, which we see in the outer zone of affixes in Passamaquoddy-Maliseet, I propose that it is the result of the second order of derivation. The functional heads are first merged together into a complex head, this complex head is merged into a low location in the clause, and then the functional heads are re-used to project the clause structure. To spell out how this works in Passamaquoddy-Maliseet, I propose that Neg, Mod, and Tense are merged together first into a complex head. This order of merger must conform to the clausal hierarchy (because it is external merge), so we get the isomorphic order:

(54)

```
           Neg
        ┌───┴───┐
      Neg      Mod
            ┌───┴───┐
          Mod     Tense
```
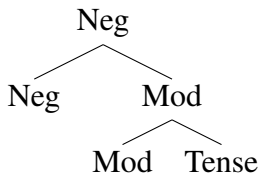
This complex head Neg is then merged into the clause. In Passamaquoddy-Maliseet, I propose that it is right-adjoined to the highest head in the extended VP (the one that projects the highest argument). In the example at hand, this is Recip:

(55)

```
                       RecipP
                 ┌────────┴────────┐
               Recip             ApplP
           ┌─────┴─────┐        ┌──┴──┐
         Recip        Neg      Appl   vP
                   ┌───┴───┐         ┌─┴─┐
                 Neg      Mod       v   VP
                       ┌───┴───┐        │
                     Mod     Tense      V
```

As stated above, the V moves through v and Appl to Recip:

24

(56)

```
                              RecipP
                 ┌──────────────┴──────────────┐
               Recip                          ApplP
        ┌────────┴────────┐              ┌──────┴──────┐
      Recip              Neg           Appl           vP
   ┌────┴────┐       ┌────┴────┐                   ┌──┴──┐
 Appl      Recip   Neg        Mod                  v    VP
┌──┴──┐     ti      wi     ┌───┴───┐                     │
v    Appl                Mod     Tense                   V
┌┴┐   aw                  s      opon
V  v
koln om
```
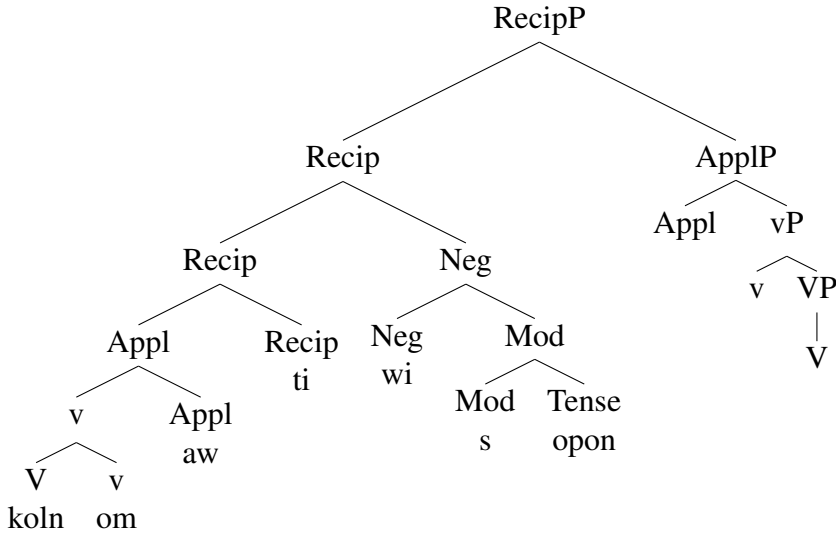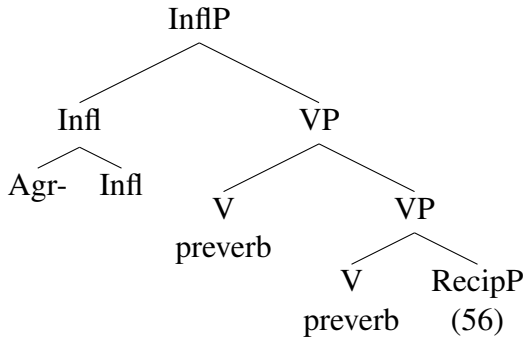
This results in the order of morphemes observed in the Passamaquoddy-Maliseet verb (ignoring agreement, which is discussed in section 4.3). Because the entire Recip is a complex head, it cannot be disrupted by clitics or other elements, and by default it will be prosodified as a single prosodic word (in a prosodic theory like the Match Theory of Selkirk 2011, heads must correspond to prosodic words).

The syntax now needs to re-use the functional heads Neg, Mod, Tense to build the functional structure of the clause. First, the syntax will merge any auxiliary verbs (the preverbs) with the RecipP that was previously built. After the highest preverb is merged, I propose that the inflectional layer of the clause begins, with a head that I will call Infl. This is the head to which the prefix is attached (cf. Oxford 2019):

(57)

```
                 InflP
         ┌─────────┴─────────┐
       Infl                  VP
    ┌────┴────┐         ┌─────┴─────┐
  Agr-      Infl       V           VP
         preverb   ┌────┴────┐
                   V        RecipP
                preverb      (56)
```
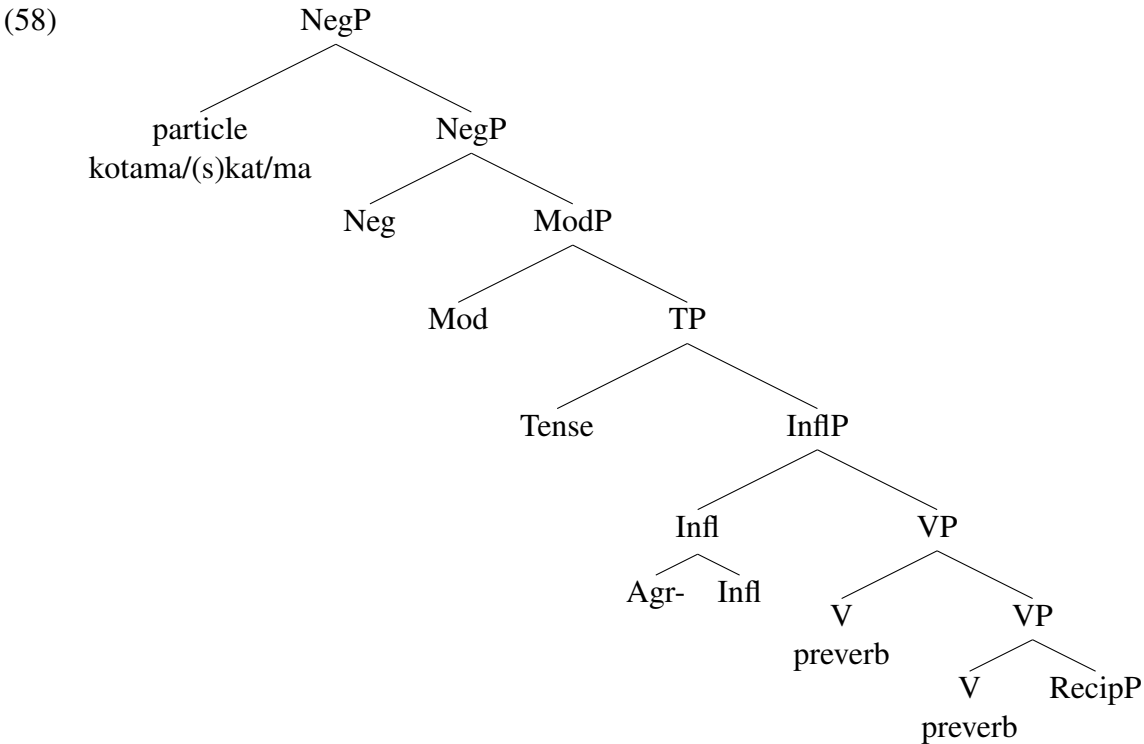
The highest V moves to Infl, concatenating with the prefix. This V and Infl, along with Agr, also form a complex head, so nothing can intervene between them, and they form a single prosodic word. The preverb may form a prosodic word with the main verb, too, depending on how long they are and whether anything comes in between them. Preverbs do not form complex heads with the main verb, however, and so elements may come in between them.[3]

_____

[3]It should be noted that many preverbs come in two forms, one morphologically freestanding, and one that attaches morphologically to the main verb. For instance, the ability preverb has a bound form *kis-* and a (potentially) free form *kisi*. So far I have given only examples of the potentially free form. The following is an example of the bound form:

(i)   Msi=te   el-ehl-ut   '-**kis**-uwehka-n.
       all=Emph IC.thus-do.to-Pass.3 3-able-use-Inan

InflP begins the inflectional layer of the clause, where Tense, Mod, and Neg need to be merged. I propose that the syntax copies the heads it previously merged as a complex head, one by one, starting from the bottom (because again it needs to obey the clausal hierarchy). It first copies Tense, merges the copy with InflP, and projects a TP. It continues by copying Mod, merging it with TP, and projecting a ModP. It then copies Neg, merges it with ModP, and projects a NegP:

(58)

```
                    NegP
           _____/    _____
        particle              NegP
   kotama/(s)kat/ma        ___/    \___
                         Neg          ModP
                                  ___/    \___
                                Mod          TP
                                         ___/    \___
                                      Tense         InflP
                                                ___/    \___
                                             Infl           VP
                                            /    \       __/    \__
                                          Agr-   Infl   V          VP
                                                     preverb    __/    \__
                                                              V        RecipP
                                                           preverb
```

The freestanding negative particle *kotama/(s)kat/ma* is then merged in Spec-NegP, as shown. Given general economy considerations, the language prefers to only pronounce one copy of each head, so the higher copies are not pronounced if the lower ones are. This means that the Neg head will be pronounced as the suffix *-wi* and will not be pronounced high in the clause as the head of NegP. Mod will either be pronounced as the morpheme *-s*, if Mod is Dubitative, or it will be pronounced only in the higher position as, for instance, *op*, with a different value. The only pronunciation of Tense is as the suffix *-opon*. (The preverbs realize lower aspectual and root modal categories.)

Note that this second way of putting functional heads together into a complex head is not head movement. In fact it is not movement at all. It is a pure instantiation of the Copy operation that forms part of movement. As such it is not subject to the locality constraint that regulates head movement. The functional heads can therefore be copied from a position below the preverbs to a position above the preverbs. In fact they must be, since this is their designated position in the clause. Obviously we want to limit this pure instantiation of Copy. I propose that it can only apply to atomic heads, precisely because they are atomic. Applying Copy to anything larger triggers pied-piping, an algorithm for determining how much to copy (Chomsky 2000), and the operation then becomes Move, with all of its accompanying properties and restrictions.

_____

'All that has been done to him he can now use.' (Mitchell 1921/1976e: 15)

I assume that a bound preverb *will* induce movement of the verb below it, so that they form a complex head.

26

In addition, although Copy can violate the head movement constraint, it will still need to be constrained to be local, within a clause. I can see two possible locality conditions on it. One is the CP: CP boundaries are going to block Copy. This must be a hard boundary. However, we could also speculate that there is a clause-internal boundary, as well. It may be no accident that Passamaquoddy-Maliseet does not use this mechanism for putting together derivational morphology within the VP. If the phase (Chomsky 2000) is the boundary, then the complex head Neg-Mod-T could only be merged to the highest head within the VP (Recip in our example) and still be copied into the inflectional layer. If it were merged lower, it would be inaccessible at the point where each functional head needs to be copied, given the Phase Impenetrability Condition. If a language is going to use this mechanism for getting functional heads onto the verb, then, it is going to have to move the verb to the highest head in the VP phase. This will result in mirror order for any heads that it moves through. It should be noted that the strongest evidence for the Mirror Principle and for mirror order has always come from valence-changing operations like causatives, applicatives, and reciprocals (e.g., Baker 1985). Because of the phase boundary at the edge of VP, languages will often need to get the verb to the edge of the VP, and this will always result in mirror order for the heads it moves through. The only time we should find isomorphic order for morphemes like Caus, Appl, Recip is if the language does not attach any inflectional heads like Tense, Aspect, Mod, Neg to the verb. Then heads like Appl, Caus, Recip can be merged into a complex head with isomorphic order and merged with the V low. The V would never move anywhere, instead Appl, Caus, Recip would be copied and merged higher. We therefore make a strong typological prediction: If a language has high functional morphemes like Tense, Mod, Neg on the verb, then it will necessarily have mirror order for derivational morphemes like Appl, Caus, Recip. I do not know at this point whether this prediction is correct, but it is consistent with all of the languages that I am aware of.

We also make strong predictions if these two modes of composition are the only ones there are. In this proposal, isomorphic order is always derived by merger of a complex head low, followed by copying them high. We then expect to find a correlation between isomorphic morpheme order and lack of verb movement to a high position.[4] There is no lowering or post-syntactic movement of any kind in this proposal, so we also expect that when a verb can be shown to be low in the clause, the order of the functional morphemes on it will be isomorphic to their order in the clause. In a famous case like English where the main verb never leaves the VP, the Tense suffix that appears on it must be merged low and then copied high into the clause. English has only one suffix, so it is impossible to tell if the order is isomorphic or mirror. But if there is another language that is exactly like English except that it also marks another category on the verb, then the order of Tense and that suffix must be isomorphic to their clause order.[5]

Conversely, wherever we see mirror order, we should also find that the verb has moved in the

---

[4]I should note that there must be a syntactic process that displaces heads to a higher position without any morphological consequences, as in verb-second in Germanic languages. This must be a different process from the head-to-head movement that builds complex heads (cf. Harizanov & Gribanova 2019). The typological predictions made here have to be understood modulo this process. The simplest way to evaluate the predictions would be to refer to the lowest position a verb occurs in on the surface in a given language. This would be in non-verb-second clauses in Germanic languages.

[5]Russian, as presented in Harizanov & Gribanova (2019), is almost this kind of language. It has suffixes Asp and T on the verb in that order, which is the mirror of their (assumed) clausal order. But the verb only raises to Asp and not to Tense (or possibly somewhere in between, Neg in Harizanov & Gribanova 2019). This means that, like English, only T is merged low and copied high.

clause to the position of the head corresponding to its outermost affix.

I do not know whether these strong predictions can be maintained. However, I wish to maintain as strong a position as possible, with as few mechanisms as possible. The strongest position is that these two modes of combination are the only ones there are, there is no post-syntactic movement, no lowering, no local dislocation (Embick & Noyer 2001), no Mirror Theory mechanisms (Brody 2000). Additionally, we make a strong separation between elements that form complex heads, and ones that attach to phrases. If an element shows strict selection and cannot be separated from its host, it forms a complex head with it. If an element is non-selective and can be separated from its host, then it is attaching to a phrase. There is no in-between. Again, I do not know at this point whether this view can be maintained, but it would be desirable to push it as far as possible.

4.3   The Agreement Morphemes

Simply to be complete, I will suggest an approach to the agreement morphemes that also appear as suffixes on the verb in Passamaquoddy-Maliseet. First, I assume that Agr morphemes can freely adjoin to functional heads, according to requirements imposed by individual languages. I assume that Agr morphemes can also adjoin to functional heads when the syntax combines them into a complex head and merges them low. One way this might work is as follows, again using the following example to illustrate the various suffixes:

(59)   ma=te   ’t-oqeci=tok-om-a-wi-wa-s-opon-il
        Neg=Emph 3-try=hit-TransAn-Dir-Neg-3.Pl-Dub-Pret-Obv
        ‘they (proximate) may not have tried to hit him/her (obviative)’

First, the Agr morpheme known as the theme sign (call it Agr1) comes in between the highest valence-changing morpheme and Neg (here, Direct). Oxford (2019) analyzes this morpheme as Voice agreement. I amend this analysis to say that Agr1 merges with whatever head is highest in the VP phase. In the example here, this is v:

(60)

28
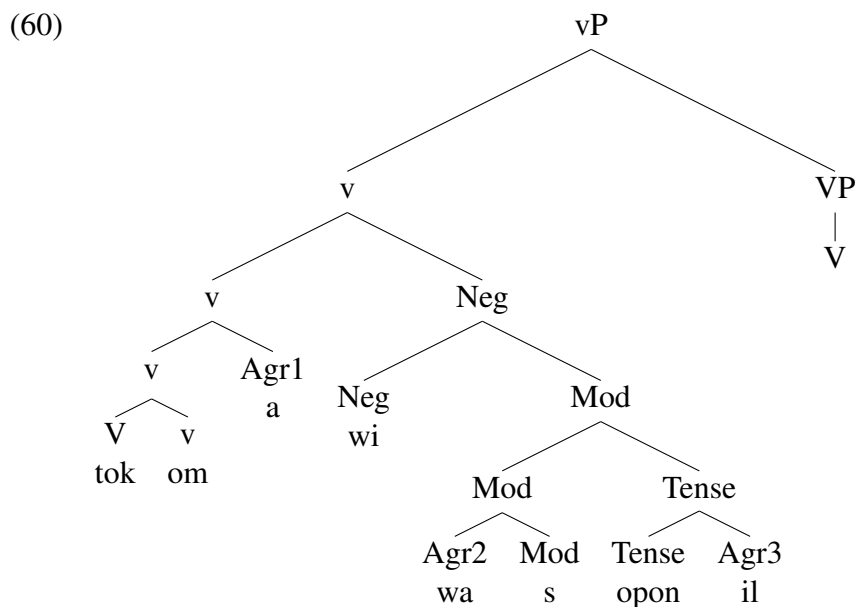
Second, the Agr morpheme known as the central agreement marker comes between Neg and Mod. I assume this is an Agr morpheme, Agr2, that adjoins with Mod before Mod is merged with Tense. Finally, the agreement marker known as the peripheral agreement marker is an Agr morpheme, Agr3, that adjoins to Tense, again before Tense and Mod merge.

As for how the Agr morphemes get their values, it is not my purpose here to spell out an account of how agreement works in Algonquian languages. For a recent proposal, see Oxford (2019). I will assume that the functional heads Mod and Tense, once they are copied high in the clause, enter into agreement relationships with certain arguments. Once they copy feature values, these values are also copied onto the lower copies of those heads, since they are copies (tokens) of the same element. This enables the values to be realized on the Agr morphemes adjoined to Mod and Tense in the low position. As for Agr1 on v, I assume that v agrees with certain arguments, and the copied features are realized on the adjoined Agr1. As for the prefix, it will agree with whatever argument Infl agrees with.

5 Conclusion

In this paper, I have shown that the "consensus" view concerning the Algonquian prefix is incorrect. It is an agreement affix, not a clitic. Additionally, accounts of Algonquian verbal morphosyntax that assume that the verb moves to a high position cannot be correct for Passamaquoddy-Maliseet, because word order indicates that the verb does not move very high in that language. This then raises an issue of locality: in order to account for the placement of the prefix on the highest element of category V, we have to say that a higher element of category V blocks affixation to all lower elements of category V. But then we have no way of getting the suffixes on the main verb in Algonquian languages. The higher element that hosts the prefix should block all affixation to the lowest V.

Additionally, an investigation of the scope of morphemes in Passamaquoddy-Maliseet indicates that there are two zones of suffixes, an inner zone with mirror order and an outer zone with isomorphic order. I proposed that there are two ways of putting complex heads together. In the first, functional heads are merged into the clause and then assembled into a complex head by head movement. In the second, the functional heads are first combined into a complex head and merged into the clause low, and then they are copied to project functional projections in the clause. This copy operation is not subject to the head movement constraint, so it can skip over intervening preverbs.

This analysis of verbal morphology makes a principled distinction between morphemes that are selective and cannot be separated from their hosts (they form complex heads) and ones that are not selective and potentially can be (they involve phrasal affixation or are simply prosodified together with their hosts). The proposal also makes strong predictions about the correlation between the linear order of morphemes and their scope order, and the correlation between the position of the verb in the clause and the order of the morphemes that appear on it. Future work should look to see whether these predictions are correct.

6 Appendix: Determining the Relation between the Order and Scope of Morphemes

In this appendix, I briefly discuss two issues regarding how to determine the relation between the order and the scope of morphemes on the verb. The first involves head-final languages. The second involves some claims about anti-mirror interpretations in Bantu languages.
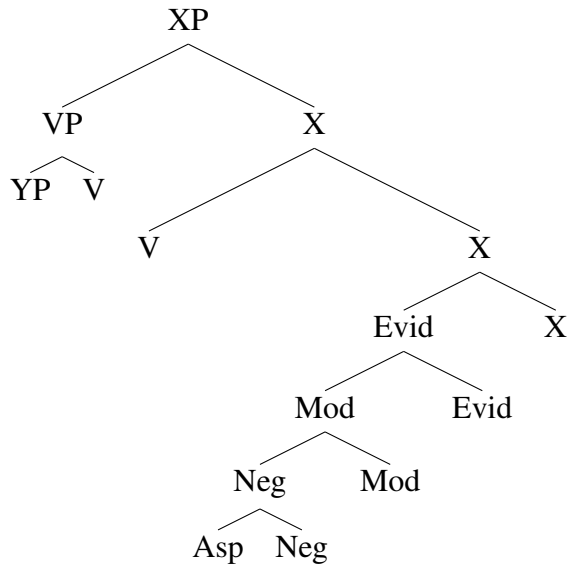
6.1 Suffixes in Head-Final Languages

Head final languages raise an interesting issue for determining whether head movement has applied, versus merger of a complex head low. The issue is that what looks like the mirror order of suffixes on the verb in a head-final language (the order that would be derived through head movement) is identical to the isomorphic order.

I illustrate with Kiowa. Adger et al. (2009) show that Kiowa is like Passamaquoddy-Maliseet in having a series of preverbal functional particles whose order can be determined. Simplifying, the order is Evidential > Modal > Negation > Aspect. Kiowa is also like Passamaquoddy-Maliseet in having a series of suffixes for these same categories, often doubling the particles. Again the order can be determined, and it is the mirror of the preverbal particle order: V-Asp-Neg-Mod-Evid (Adger et al. 2009: 76, (57)).

Given the proposals here, it would be natural to assume that the verb has undergone head movement through the projections Asp, Neg, Mod, Evid. However, Adger et al. (2009) give several arguments against a head movement account of the suffixes.
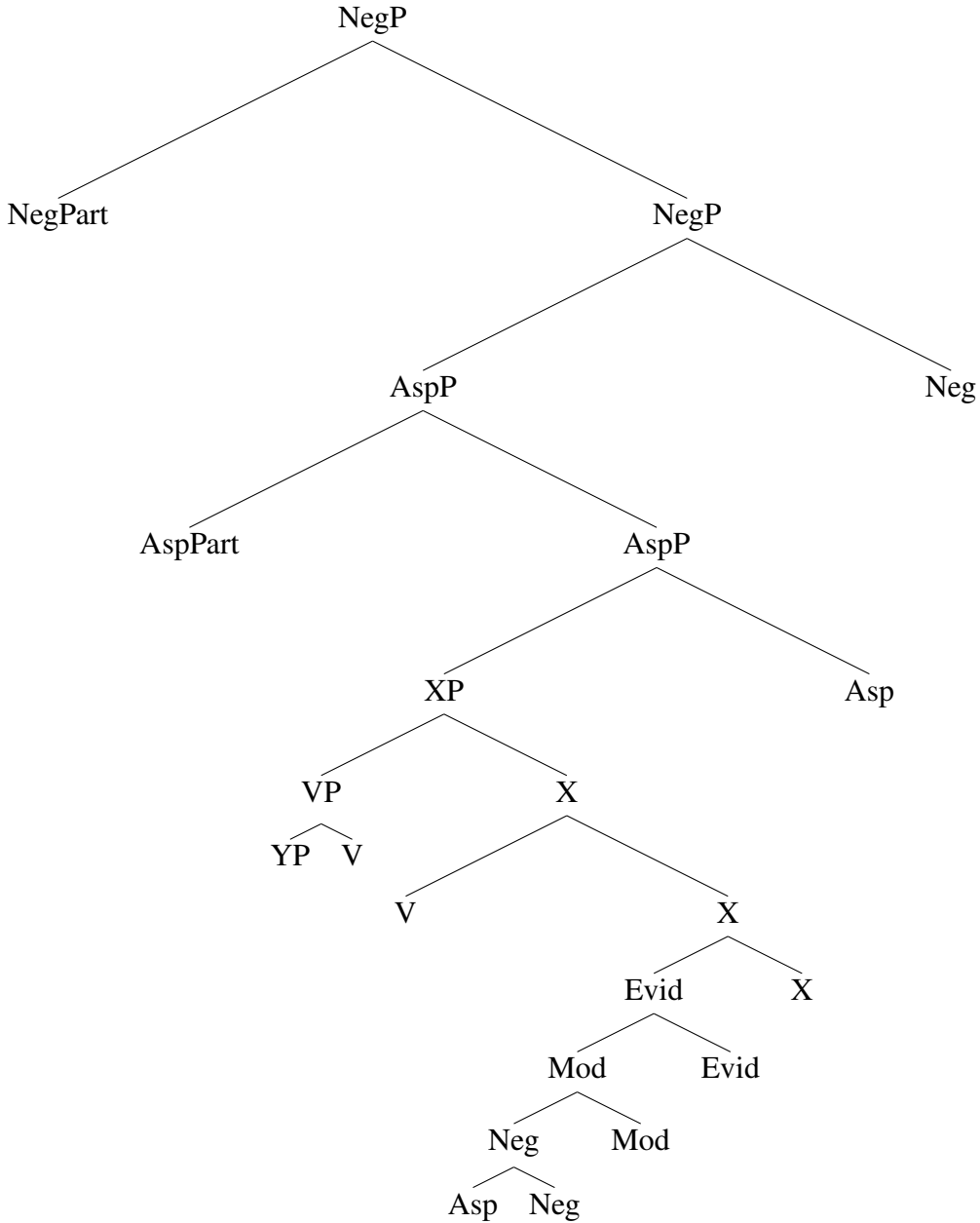
Kiowa seems to be a head-final language. It is important to point out that in head-final languages, the isomorphic order of suffixes is the reverse of what it would be in a head-initial language. In a head-final language, heads on the right are hierarchically higher than heads on the left. This means that the Kiowa suffix order V-Asp-Neg-Mod-Evid is actually the isomorphic order. In the theory here, it could be derived either through head-movement, or through base-generation of a complex head Asp-Neg-Mod-Evid low on the verb. Given the arguments against head movement in Kiowa, I would propose that a complex head Asp-Neg-Mod-Evid is merged into a low position X to which the verb moves:

(61)

```
                        XP
              ┌─────────┴─────────┐
             VP                    X
           ┌──┴──┐         ┌───────┴───────┐
          YP   V          V                 X
                       ┌──────────────┴──────────┐
                                    Evid            X
                              ┌──────┴──────┐
                            Mod            Evid
                        ┌────┴────┐
                       Neg       Mod
                    ┌───┴───┐
                  Asp     Neg
```

The functional heads are then copied and merged with XP, starting with Asp. Each projects a phrase, AspP, NegP, ModP, EvidP. The preverbal particles may be the specifiers of these projections. I show the tree as far as NegP:

(62)

```
                              NegP
                    ┌───────────┴───────────┐
                 NegPart                   NegP
                              ┌─────────────┴─────────────┐
                            AspP                          Neg
                    ┌─────────┴─────────┐
                 AspPart              AspP
                              ┌─────────┴─────────┐
                            XP                    Asp
                    ┌────────┴────────┐
                   VP                 X
                 ┌──┴──┐       ┌───────┴───────┐
                YP   V        V               X
                                      ┌────────┴────────┐
                                    Evid               X
                              ┌───────┴───────┐
                            Mod             Evid
                       ┌──────┴──────┐
                      Neg           Mod
                    ┌──┴──┐
                   Asp   Neg
```

This is obviously not a complete theory of Kiowa, but it does appear to hold promise, and is not subject to the criticisms that Adger et al. (2009) level against various alternatives.[6] The important point here is that, in head-final languages, what appears to the mirror order of suffixes is also the isomorphic order, and could be derived either by head movement or by merger of a complex head low followed by copy. Which is correct for a given language will have to be determined through careful examination of word order and other facts.

---

[6]The one thing it does not account for in Kiowa is the order of postverbal phrases. Postverbal phrases seem to be rigidly ordered, unlike preverbal ones. Their order mirrors their hierarchy, with higher ones further to the right. I can see several possible approaches to this rigid order, but will not explore them for reasons of space. Adger et al. (2009) argue that Mirror Theory explains the order, but Mirror Theory cannot account for Passamaquoddy-Maliseet, so I must reject their explanation.

6.2 Two Bantu Cases

Bantu languages frequently come up in discussions of morpheme order and scope. There are four relevant valence-changing affixes, Caus(ative), Appl(icative), Recip(rocal), and Pass(ive). They most commonly occur as suffixes on the verb in that order, though with some language variation. One important variation is that in some languages, Caus comes after Appl and Recip rather than before them. There is also some variability in scope, with some languages permitting variations in suffix order correlating with different scope orders (e.g., (65) below), and others supposedly permitting two different scope orders for a single suffix order. See Hyman (2003b) for an overview.

In this appendix I discuss two cases where researchers have argued that a single suffix order has two different scope interpretations. In both of these cases, I show that this is not correct. The two different interpretations are not a matter of affix scope. This is important because it shows a need to be careful in determining what the scope of affixes is.

The first case is Nyakyusa, discussed by Myler (2017). Nyakyusa has a rigid suffix order Recip-Caus. However, that order with some verb stems has two different interpretations:[7]

(63)   Nyakyusa (Myler 2017: 105, (8))
       a.   sob- 'get lost (intr.)'
       b.   sof-i̧ 'to lose (tr.)'
       c.   sob-an-i̧ 'get each other lost'
       d.   sof-an-i̧ 'to lose each other'

Myler describes (63c) as a "causativized reciprocal," while (63d) is a "reciprocalized causative." This makes (63c) an example of mirror order, while (63d) is the opposite order (isomorphic order).

This is not correct. They are both isomorphic orders: the reciprocal has to be taking scope over the causative in both cases. It should not be possible to reciprocalize the intransitive verb, since it only has one argument. If the translations are accurate, the difference here is not scope, but what kind of causative it is. The one in (63c) seems to have two events, a causing event and a getting lost event, while the order in (63d) instead has a single (transitive) event (like what is often regarded as a "lexical" causative). Myler (2017) is then incorrect that this is an example of two different scope orders. In both, Recip takes scope over Caus, it is just that Caus seems to have two different interpretations. The fact is that Bantu languages that have Caus outside of Appl and Recip violate the typical mirror order of suffixes in Bantu. As Hyman (2003a) discusses at length, in these languages Caus really has to attach first, with Appl and Recip attaching outside of that, despite the overt ordering. As Hyman notes, researchers have proposed various accounts of this, from metathesis to "interfixation." While ultimately important, the correct account of this is not something that I can investigate at length here. The important point is that (63c) and (63d) do not differ in morpheme scope.[8]

---

[7]Myler (2017) cites a 2000 manuscript by Hyman for these forms ("Bantu suffix ordering and its phonological consequences"). I have not been able to find this reference. I have also not been able to find the form in (63c) in Hyman's published works that present causatives in Nyakyusa. Those works only present the form in (63d). (Myler spells the language "Nyakusa," but Hyman's published works spell it "Nyakyusa." I have followed Hyman.)

[8]The question that Myler (2017) was concerned with was why spirantization applies in (63d) but not (63c). In Myler's scopal analysis, the reciprocal always intervenes between the root and Caus in (63c), but at some level the root and Caus are adjacent in (63d). Caus causes sprirantization. This analysis cannot be correct, since Recip has to take scope over Caus even in (63c). An alternative analysis is to say that the root has a special spirantized allomorph

The second Bantu case involves passives plus applicatives in Ndebele. Ndebele is a symmetric object language (see Bresnan & Moshi 1990). Either NP can become the subject in the passive of an applicative:

(64) Ndebele (Hyman et al. 2009: 298, (51))

    a.   abantwana b-a-phek-el-w-a   ukudla
        children   they-Past-cook-Appl-Pass-FV food
        'The children were cooked food.'

    b.   ukudla kw-a-phek-el-w-a   abantwana
        food   it-Past-cook-Appl-Pass-FV children
        'Food was cooked for the children.'

Hyman et al. (2009), Skinner (2009), Myler (2017) take this to reflect two different scope orders for Appl and Pass. When the applied argument becomes the subject, Pass is taking scope over Appl. When the direct object becomes the subject, then Pass instead applies first, and Appl then adds an argument to that. Hyman et al. (2009) provide some evidence from reduplication to argue for this analysis. If this were correct, then the linear order of affixes Appl-Pass would correspond to two different scope orders.

This could not be correct, however. In both examples, the Pass head is suppressing the external argument. In order for the Appl head to be able to scope over Pass, the external argument has to be part of the VP. Pass would attach to the VP and remove the external argument. But then, when Pass instead attaches outside Appl, it would not be able to remove the external argument, because Appl is in the way. It should only be able to remove the applied argument.

The only way to make this type of analysis work is to have the external argument introduced by a different head, call it Voice (Kratzer 1996), and this Voice can be merged either below or above Appl. If it is merged below Appl, then Pass can attach first and suppress its argument; if it is merged above Appl, then Pass will attach outside of that and suppress the external argument. The problem now is that the applied argument is the highest NP in the passive regardless of the derivation. It should always have to move to become subject. There is simply no way to explain the ability of the lower object to move over the higher as a different scope order for the two heads Appl and Pass (which seems to have been the motivation for this proposal). Additionally, if we allow Voice to introduce the external argument below Appl, then we expect that in the active, the applied argument, being higher than the external argument, could be the surface subject while the logical external argument is treated as an object. This is not correct, as far as I know. Applied arguments are always treated like objects in the active voice.

I conclude that neither of these cases is about the relative scope of morphemes. In the Ndebele case, Pass always has to take scope over Appl, since it has to remove the external argument, which is necessarily introduced higher than the applied argument. In the Nyakyusa case, Recip always has to take scope over Caus.

Contrast these two cases with one from Bemba, where the two morphemes Recip and Caus do indeed take scope differently, with two different interpretations and two different affix orders:

(65) Bemba (Givón 1976)

---

when it is used transitively (as a "lexical" or single-event causative).

    a.   Naa-mon-**an-ya**   Mwape na Mutumba.
              I-Past-see-**Recip-Cause** M.   and M.

              'I made Mwape and Mutumba see each other.'

    b.   Mwape na Chilufya baa-mon-**eshy-ana**   Mutumba.
              M.   and Ch.   3pS-see-**Cause-Recip** M.

              'Mwape and Chilufya made each other see Mutumba.'

In (65a), Recip must apply first, creating a VP 'Mwape and Mutumba see each other'; Caus then applies to that. In (65b), Caus applies first to create 'X causes Y to see Mutumba', and then the upper causative is reciprocalized to unite X and Y (for an analysis of the reciprocal, see Bruening 2006).

It is therefore clear that valence-changing affixes in Bantu languages *can* take different scopes. However, in the examples where that is clearly happening, the affix order changes, as well (to be the mirror of the scope order). In cases where it has been claimed that a single affix order corresponds to two different scope orders, it is not so clear that that is indeed what is going on. In the two cases of this discussed here, it is not. Those two cases are not about affix scope.[9]

What this illustrates is the need to be careful. I have made strong predictions about the relation between affix order and affix scope in this paper. In order to evaluate those predictions, we need to be certain that we are indeed talking about affix scope, and not something else.

References

Adger, David, Daniel Harbour & Laurel J. Watkins. 2009. *Mirrors and microparameters: Phrase structure beyond free word order.* Cambridge: Cambridge University Press.

Anonymous. 1974. *Akonutomuwin!* Indian Township, Maine: Wabnaki Bilingual Education Program.

---

[9]Hyman (2003b) also presents examples like the following as evidence for two different scope orders corresponding to a single affix order:

(i)   Chichewa (Hyman 2003b: 248, (3))

    a.   alenjé a-ku-líl-íts-il-a   mwaná ndodo
          hunters 3.Pl-Prog-cry-Caus-Appl-FV child   sticks

          'the hunters are making the child cry with sticks'

    b.   alenjé a-ku-tákás-its-il-a   mkází mthíko
          hunters 3.Pl-Prog-stir-Caus-Appl-FV woman spoon

          'the hunters are making the woman stir with a spoon'

According to Hyman (2003b), (ia) has the instrumental applicative attach outside the causing event, so that it is that event that the instrumental modifies (the hunters are using the sticks to make the child cry). In (ib), the instrumental applicative attaches inside Caus, so that it modifies the caused event (the woman is using the spoon to stir). In this case, this is a possible analysis (unlike the two cases discussed in the text). However, it is not clear that this is the only possible analysis. It is also possible that the instrumental attaches outside of Caus in both cases, but when an instrumental modifies a complex event, it is capable of being interpreted with either sub-event. We know that this is possible for modifiers like *again*, for instance (see Dowty 1979, Egg 1999, Jäger & Blutner 2003, Williams 2015, Bruening 2018 for arguments against syntactic constituency analyses of *again*). It is therefore not so clear that there are any cases of a single morpheme order in Bantu languages corresponding to two distinct scope orders.

Baker, Mark. 1985. The Mirror Principle and morphosyntactic explanation. *Linguistic Inquiry* 16. 373–415.

Bresnan, Joan & Lioba Moshi. 1990. Object asymmetries in comparative Bantu syntax. *Linguistic Inquiry* 21. 147–185.

Brittain, Julie. 2001. *The morphosyntax of the Algonquian conjunct verb: A minimalist approach.* New York: Garland.

Brody, Michael. 2000. Mirror theory: Syntactic representation in perfect syntax. *Linguistic Inquiry* 31. 29–56.

Bruening, Benjamin. 2001. *Syntax at the edge: Cross-clausal phenomena and the syntax of Passamaquoddy.* MIT dissertation. Distributed by MIT Working Papers in Linguistics, Cambridge, MA.

Bruening, Benjamin. 2006. The morphosyntax and semantics of verbal reciprocals. Ms., University of Delaware.

Bruening, Benjamin. 2007. Wh-in-situ does not correlate with wh-indefinites or question particles. *Linguistic Inquiry* 38. 139–166.

Bruening, Benjamin. 2018. Depictive secondary predicates and small clause approaches to argument structure. *Linguistic Inquiry* 49. 537–559.

Chomsky, Noam. 2000. Minimalist inquiries: The framework. In Roger Martin, David Michaels & Juan Uriagereka (eds.), *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, 89–155. Cambridge, MA: MIT Press.

Cinque, Guglielmo. 1999. *Adverbs and functional heads.* Oxford: Oxford University Press.

Cook, Clare Elizabeth. 2008. *The syntax and semantics of clause-typing in Plains Cree.* University of British Columbia dissertation.

Davis, Colin. 2018. The constraints and consequences of possessor extraction in english. Ms., MIT, available at https://ling.auf.net/lingbuzz/003971.

Déchaine, Rose-Marie. 1999. What Algonquian morphology is really like: Hockett revisited. In Leora Bar-el, Rose-Marie Déchaine & Charlotte Reinholtz (eds.), *Papers from the workshop on structure and constituency in native american languages*, vol. 17 MIT Occasional Papers, 25–72. Cambridge, MA: MITWPL.

Dowty, David. 1979. *Word meaning and Montague Grammar.* Dordrecht: Kluwer.

Egg, Markus. 1999. Deriving and resolving ambiguities in *wieder*-sentences. In P. J. E. Dekker (ed.), *Proceedings of the 12th amsterdam colloquium*, 109–114. Amsterdam: ILLC/Department of Philosophy.

Embick, David & Rolf Noyer. 2001. Movement operations after syntax. *Linguistic Inquiry* 32. 555–595.

Francis, David A. & Robert M. Leavitt. 1995. The Indian devil, mischief-maker. In Brian Swann (ed.), *Coming to light: Contemporary translations of the native literatures of north america*, 503–518. New York: Random House.

Francis, David A. & Robert M. Leavitt. 2008. *Peskotomuhkati wolastoqewi latuwewakon a Passamaquoddy-Maliseet dictionary*. Orono, Maine: The University of Main Press.

Gabriel, Lorraine. 1979. *Ehpit naka 'puwin (the woman and the body)*. Indian Township, Maine: Wabnaki Bilingual Education Program. English transation by Robert M. Leavitt, edited by Wayne A. Newell.

Givón, Talmy. 1976. Some constraints on Bantu causativization. In Masayoshi Shibatani (ed.), *The grammar of causative constructions*, vol. 6 Syntax and Semantics, 325–351. New York: Academic Press.

Goddard, Ives. 2007. Reconstruction and history of the independent indicative. In H. C. Wolfart (ed.), *Papers of the 38th Algonquian conference*, 207–271. Winnipeg: University of Manitoba.

Halle, Morris & Alec Marantz. 1993. Distributed morphology and the pieces of inflection. In Kenneth Hale & Samuel Jay Keyser (eds.), *The view from building 20: Essays in linguistics in honor of Sylvain Bromberger*, 111–176. Cambridge, MA: MIT Press.

Harizanov, Boris & Vera Gribanova. 2019. Whither head movement? *Natural Language and Linguistic Theory* 37. 461–522.

Hyman, Larry M. 2003a. Sound change, misanalysis, and anology in the Bantu causative. *Journal of African Languages and Linguistics* 24. 55–90.

Hyman, Larry M. 2003b. Suffix ordering in Bantu: A morphocentric approach. *Yearbook of Morphology* 2002. 245–281.

Hyman, Larry M., Sharon Inkelas & Galen Sibanda. 2009. Morphosyntactic correspondence in Bantu reduplication. In Kristin Hanson & Sharon Inkelas (eds.), *The nature of the word: Essays in honor of Paul Kiparsky*, 273–309. Cambridge, MA: MIT Press.

Jäger, Gerhard & Reinhard Blutner. 2003. Competition and interpretation: The German adverb *wieder* ('again'). In Ewald Lang, Claudia Maienborn & Cathrine Fabricius-Hansen (eds.), *Modifying adjuncts*, 393–416. Berlin: Mouton de Gruyter.

Koopman, Hilda. 2005. Korean (and Japanese) morphology from a syntactic perspective. *Linguistic Inquiry* 36. 601–633.

Kramer, Ruth. 2014. Clitic doubling or object agreement: The view from Amharic. *Natural Language and Linguistic Theory* 32. 593–634.

Kratzer, Angelika. 1996. Severing the external argument from its verb. In John Rooryck & Laurie Zaring (eds.), *Phrase structure and the lexicon*, 109–137. Dordrecht: Kluwer.

Leavitt, Robert M. 1996. *Passamaquoddy-Maliseet*. München: Lincom Europa.

LeSourd, Philip S. 1993. *Accent and syllable structure in Passamaquoddy*. New York: Garland.

McGinnis, Martha. 1995. Word-internal syntax: Evidence from Ojibwa. In Päivi Koskinen (ed.), *Proceedings of the 1995 annual conference of the Canadian Linguistics Association*, 337–347. Somerville, MA: Cascadilla.

Mitchell, Lewis. 1921/1976a. *Espons ('raccoon')*. Indian Township, Maine: Wabnaki Bilingual Education Program. Edited and updated version of text in J. D. Prince (1921), "Passamaquoddy Texts," Volume X of the Publications of the American Ethnological Society.

Mitchell, Lewis. 1921/1976b. *Kiwahqiyik ('the giants')*. Indian Township, Maine: Wabnaki Bilingual Education Program. Edited and updated version of text in J. D. Prince (1921), "Passamaquoddy Texts," Volume X of the Publications of the American Ethnological Society.

Mitchell, Lewis. 1921/1976c. *Koluskap naka 'siwiyi/oqim/wocawson ('koluskap and his relatives/loon/wind')*. Indian Township, Maine: Wabnaki Bilingual Education Program. Edited and updated version of text in J. D. Prince (1921), "Passamaquoddy Texts," Volume X of the Publications of the American Ethnological Society.

Mitchell, Lewis. 1921/1976d. *Koluskap nekotok skitkomiq ('when Koluskap left the earth')*. Indian Township, Maine: Wabnaki Bilingual Education Program. Edited and updated version of text in J. D. Prince (1921), "Passamaquoddy Texts," Volume X of the Publications of the American Ethnological Society.

Mitchell, Lewis. 1921/1976e. *Mikcic ('turtle')*. Indian Township, Maine: Wabnaki Bilingual Education Program. Edited and updated version of text in J. D. Prince (1921), "Passamaquoddy Texts," Volume X of the Publications of the American Ethnological Society.

Mitchell, Lewis. 1921/1976f. *Pukcinsqehs ('the tree-stump woman')*. Indian Township, Maine: Wabnaki Bilingual Education Program. Edited and updated version of text in J. D. Prince (1921), "Passamaquoddy Texts," Volume X of the Publications of the American Ethnological Society.

Myler, Neil. 2017. Exceptions to the mirror principle and morphophonological 'action at a distance". In Heather Newell, Máire Noonan, G. L. Piggott & Lisa deMena Travis (eds.), *The structure of words at the interfaces*, 100–125. Oxford: Oxford University Press.

Nevins, Andrew. 2011. Multiple agree with clitics: Person complementarity vs. omnivorous number. *Natural Language and Linguistic Theory* 29. 939–971.

Newell, Heather & Glynne Piggott. 2014. Interactions at the syntax-phonology interface: Evidence from Ojibwe. *Lingua* 150. 332–362.

Newell, Irene. 1979. *Kehtaqs ('ghost stories')*. Indian Township, Maine: Wabnaki Bilingual Education Program.

Newell, Wayne. 1974. *Kukec*. Indian Township, Maine: Wabnaki Bilingual Education Program.

Oxford, Will. 2019. Inverse marking and multiple agree in Algonquin: Complementarity and variability. *Natural Language and Linguistic Theory* 37. 955–996. doi:10.1007/s11049-018-9428-x.

Oxford, William Robert. 2014. *Microparameters of agreement: A diachronic perspective on Algonquian verb inflection*. University of Toronto dissertation.

Pietraszko, Asia. 2018. Auxiliary vs INFL in Bantu. *Natural Language and Linguistic Theory* 36. 265–308.

Piggott, Glynne & Heather Newell. 2007. Syllabification, stress and derivation by phase in Ojibwa. Ms., McGill University.

Pollock, Jean-Yves. 1989. Verb movement, universal grammar, and the structure of IP. *Linguistic Inquiry* 20. 365–424.

Preminger, Omer. 2009. Breaking agreements: Distinguishing agreement and clitic doubling by their failures. *Linguistic Inquiry* 40. 619–666.

Preminger, Omer. 2014. *Agreement and its failures*. Cambridge, MA: MT Press.

Richards, Norvin W. 2004. The syntax of the conjunct and independent orders in Wampanoag. *International Journal of American Linguistics* 70. 327–368.

Selkirk, Elisabeth. 2011. The syntax-phonology interface. In John Goldsmith, Jason Riggle & Alan C.L. Yu (eds.), *The handbook of phonological theory*, 435–484. Oxford: Blackwell 2nd edn.

Sherwood, David F. 1986. *Maliseet-passamaquoddy verb morphology* Canadian Museum of Civilization Mercury Series. Ottawa: National Museum of Canada.

Skinner, Tobin R. 2009. *Investigations of downward movement*. McGill University dissertation.

Svenonius, Peter. 2016. Spans and words. *Morphological Metatheory* 229. 201–222. doi:10.1075/la.229.07sve.

Williams, Alexander. 2015. *Arguments in syntax and semantics*. Cambridge: Cambridge University Press.

Zwicky, Arnold M. & Geoffrey K. Pullum. 1983. Cliticization vs. inflection: English *n't*. *Language* 59. 502–513.

Benjamin Bruening
Department of Linguistics and Cognitive Science
University of Delaware
Newark, DE 19716
(302) 831-4096
bruening@udel.edu