Macroparameter Learnability: An Algonquian Case Study

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Abstract Innu-aimûn morphosyntax includes operations of multiple head-movement triggered by attracting heads of several categorial types. This pattern is illustrated, and contrasted with the more restricted multiple head-movement patterns in ǂHoan and Perenakan Javanese. A new macroparameter is postulated to cover the Innu-aimûn case, and Algonquian languages in general. A learnability problem is identified, given the two language types discussed, and a proposal is made involving the relative order of acquisition of multiple head-movement parameter settings and functional category classification.

1 Introduction

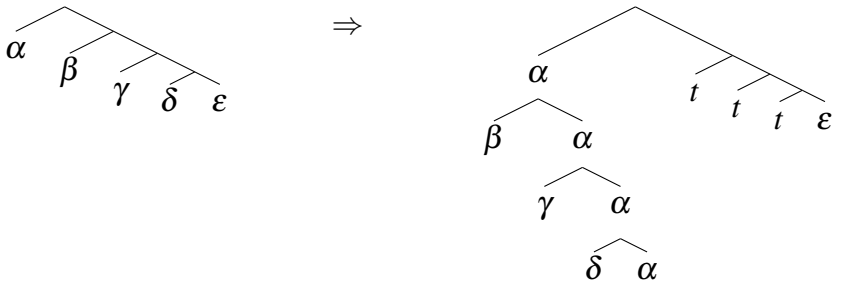
While the introduction of parameters into the set of conceptual tools available for linguistic theory has provided explanatory solutions for several critically important learnability problems, the notion of a parameter itself introduces thorny new questions. One of these is how the search space for grammatical variation should be partitioned by the universally available parameters. Does universal grammar provide a largeish and unordered set of "microparameters", as suggested by Kayne (2000)? Or do certain specific parameters carry more weight than others, and divide the grammatical search space into large sub-spaces, as Baker's (1996, 2002) "macroparameter" model would imply? And if so, should macroparameters be thought of as grammatical primitives provided by universal grammar directly, as Baker proposes, or are they *emergent* phenomena which influence more fundamental parametric choices, as argued by Roberts (2011).

This paper examines these questions through the prism of the grammar of Algonquian languages. Languages of this family have traditionally been classified as *polysynthetic*, and as such, they arguably belong to an area in the grammatical search space relatively distant from many of the well-studied Indo-European languages. At the same time, a rich scholarly literature which dates from the 19th century provides extensive documentation of the grammatical properties of a number of these languages. What I will show is that one of the major grammatical properties which distinguish languages of this family from others—the "genius" of Algonquian, in Sapir's (1921) terminology—can be characterised accurately in parametric terms as reflecting a specific macroparameter setting, and that a comparison of the Algonquian macroparameter with related microparametric choices made in the specific unrelated

languages of ǂHoan and Perenakan Javanese allows us to sharpen the question how macroparameters are implicated in the process of acquisition by parameter setting.

The macroparameter in question involves the use of functional heads to attract more than one lower head in a phrase marker. Such multiple head movement was first proposed in Collins (2002) to account for the behaviour of compound verbs in ǂHoan. Cole et al. (2008) have shown that the same type of operation is used in Perenakan Javanese. The general effect of multiple head movement is shown in (1), from Cole et al. (2008):

(1)



Take α, β, γ and δ to be X^0 constituents in (1). The highest head α is a multiple attractor, so it triggers movement of β, γ, and δ, in that order. As each moves, it adjoins to the attracting head, in the usual way. But γ and δ adjoin by "tucking-in", in the sense of Richards (1997), so the final content of the complex α includes the other three heads in a linear order which matches their original, pre-attraction, ordering.

How this works out in an actual language can best be seen in the Perenakan Javanese case.

(2) a. *Tono pernah gelem isa ngomong Inggris.*
Tono PERF want can speak Inglish
'Tono has wanted to be able to speak English.'

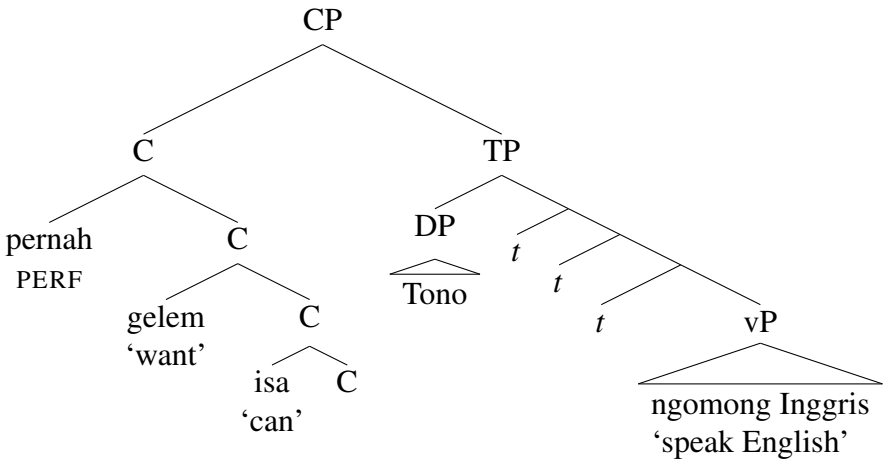
b. *Pernah Tono gelem isa ngomong Inggris?*
PERF Tono want can speak English
'Has Tono ever wanted to be able to speak English?'

c. *Pernah gelem isa Tono ngomong Inggris?*
PERF want can Tono speak English
'Has Tono ever wanted to be able to speak English?'

This language permits the use of multiple auxiliaries with the principle verb in a simple statement, as in (2a). When polar questions are formed, a functional

category outside TP (i.e. C) attracts the closest auxiliary past the subject, just as occurs in English. This type of derivation results in questions like (2b). But there is another option in Perenakan Javanese. The attracting C can continue on in the same derivation to attract the remaining auxiliary verbs, one at a time. The end result in this case is a sentence like (2c), with the structure in (3).

(3)



In ǂHoan and Perenakan Javanese, the use of multiple head movement is confined to a single category of functional heads, *v* and C, respectively. It has not been shown that multiple head movement is an active part of other languages, but as this is a relatively new type of grammatical concept, it may simply be the case that it has not been recognised yet. Nevertheless, since the phenomenon appears to be rare, it seems fairly likely that this is a marked grammatical phenomenon, which means that positive evidence will be necessary for a child to be able to acquire this grammatical pattern in any language. In parameter theoretic terms, it seems that there must be a set of parameters which control whether C and *v* may attract multiply, and the default setting for these parameters is negative, blocking multiple attraction in the unmarked case.

It will be shown that in the Algonquian languages, in contrast, all functional categories are able to attract multiple heads. A grammar of the Algonquian type requires a more general “macroparameter” setting, instead of the “microparametric” specifications which control the derivation in ǂHoan and Perenakan Javanese.

When we compare how the Algonquian macroparameter is set with the acquisition of the properties of these other languages, it becomes clear that the notion of a macroparameter entails a specific learnability problem, which will be addressed. The solution which I propose for this new problem is based on a race between the learning of categorial information and the setting of a movement parameter in the very early stages of syntactic development.

2 The Algonquian macroparameter

Some background information on certain characteristics of Algonquian grammars will prove helpful in understanding what follows.[1] Algonquian languages show considerable flexibility in word order, and poorly understood discourse factors appear to control where arguments appear relative to the verb in any clause (Dahlstrom 1995, Junker 2004). All arguments may be null, although the verbal morphology does not provide enough information to recover the content of every argument. Verbal agreement patterns seem indifferent to whether Case assignment has or has not occurred, and in fact it is contentious whether Case features are a part of Algonquian grammars at all (Ritter & Rosen 2005, Bruening 2009).

Verbs and nouns in Algonquian languages display considerable morphological complexity. Bloomfield (1927) identified the fundamental pattern in large words as the *tripartite* system of *initial*, *medial*, and *final* components. If we set aside the Algonquianist terminology, the exceptional element of this pattern is the regular combination of two or more root- or stem-like morphological components followed by some set of derivational suffixes and inflectional suffixes. Examples of such tripartite word forms in Innu-aimûn appear in (4).

(4) a. tshinuâshkuan ‘it (something tree/stick-like) is long. (tshinuau ‘it is long’, -âshku- ‘tree-like’)

b. tshishunûshkuâutshinam^{u} ‘s/he coated it with flour’ (tshishunam^{u} ‘s/he coats it’, -nûshkuau- ‘flour’)

c. kakusseshiutenueu ‘cook in the French Canadian way’ (kakusseshiu ‘s/he is French-Canadian’, -tenueu ‘cook’)

d. kueshtakâmishkupitshu ‘s/he goes around the lake on the ice with a toboggan’ (kuesht- ‘other side’, -kâm ‘water’, -shku ‘ice’, -pitshu ‘travel (how)’)

Verbs can be preceded by a number of “preverbs” to form multi-word verbal clusters. 1st and 2nd person clitic pronouns appear to the left of verbal clusters.[2] Since the verbal clusters themselves do not provide a unique position for clitics to occupy, the simplest account seems to be that they raise to a specific position outside the portion of the clause where the verbal cluster is present. As verb raise at least to T—as will be seen—the clitic position should be low in the “left periphery”. If the

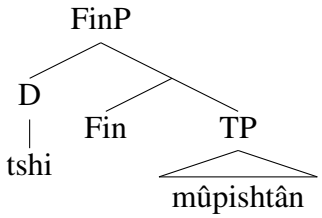
1 The analytic proposals sketched briefly in this section are presented more thoroughly and in more detail in Branigan (2011). As the focus of the present paper is the learnability problem which arises from these proposals, I take the liberty of omitting many of the steps in the arguments in support of this general approach to Algonquian morphosyntax.

2 Some Algonquian languages make use of 3rd person clitics, as well.

lowest left-peripheral head is Fin (Rizzi 1997), a natural supposition is that clitics occupy the specifier position in FinP, immediately to the left of TP.[3] There can be no more than one such clitic per clause, a fact which supports locating the clitic in a specifier position, rather than an adjoined position. But the metrical requirements of the clitic pronouns still force them to attach prosodically to the verbal element to their right. If both first and second person clitics are syntactically available in a single clause, the latter is always the one which is pronounced.

(5) a. *Tshi-mûpisht-ân*
2-visit-2>1
'You visit me.'

b.



2.1 Multiple attraction by T

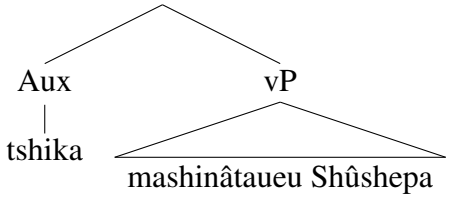
(6) *Mânî tshika mashinâtâueu Shûshepa.*
Marie FUT vote.for Joseph
'Marie will vote for Joseph'

In several respects, preverbs resemble the clausal auxiliary elements which are found in many other languages, including English, where the modal auxiliaries are quite similar to Algonquian preverbs. Like some preverbs, English modals express ideas of potentiality (*can, may*) or tense (*will*). (There are, of course, a number of other varieties of meaning which are expressed by the Algonquian preverbs but not by English modals. However, the other preverb meanings are still typical of what clausal auxiliaries express in other non-Algonquian languages.) And English modals normally appear to the left of the verb cluster. It makes sense therefore to try to understand the role of preverbs in Alqonquian languages by analysing them as grammatically equivalent to auxiliaries in many other languages. And that means treating preverbs as functional categories which head syntactic phrases which

3 The first proposal that clitics occupy a position of this type is McGinnis (1995).

dominate the verb phrase. Under such a treatment, the syntactic structure of (6) would then be partially represented as (7).

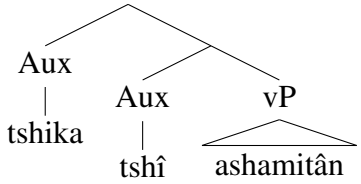
(7)



Richer syntactic structures would be required for sentences with multiple preverbs, since every preverb must serve as the head of a new functional projection. So a partial representation of the structure of (8 a) would be (8b).

(8) a. *Apû tshika tshî ashamitân.*
not FUT CAN feed-CJ/1>2
'I can't give you any food.'

b.



But there is an immediate problem with this scenario. With verbs in the independant mode, past and present tense information is realized in the verbal inflection. And tense inflection can cooccur with various types of (semantically compatible) preverbs.[4]

(9) a. *N-uî mûpishtua-∅ Ânî.*
1-WANT visit-1>3/PAST Annie
'I wanted to visit Annie'

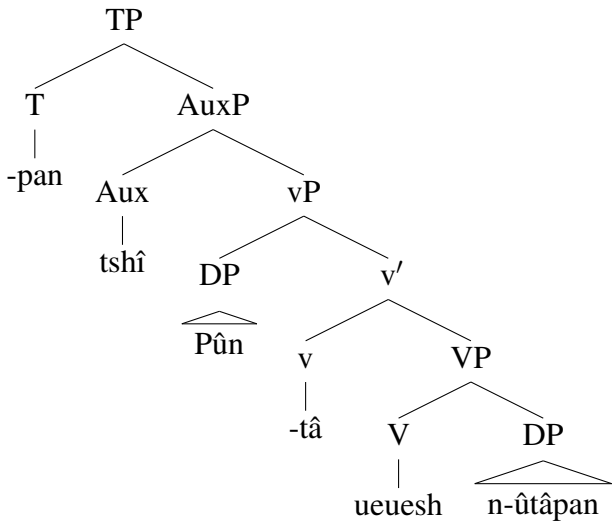
b. *Pûn tshî ueueshtâ-pan n-ûtâpân.*
Paul CAN repair-3/PAST 1-car
'Paul was able to fix my car.'

4 Present tense inflection actually coocurs with the future preverb *tshika*, which implies first, that present tense might be more accurately characterised as simply non-past, and second, that future tense is syntactically realised in a different location than T. Cinque's (1999) cartography identifies the location for future tense as a functional category lower than the location for past tense. But neither detail is particularly significant for the particular issues being addressed here.

c. *Ni-pâ* *tshî* *nipânâ-pan.*
1-SHOULD CAN sleep-1/PAST
'I should have been able to sleep.'

The (9) examples simply highlight the typical use of tense inflection in the independant mode with modal preverbs. What is critical to recognise in these examples is that tense has wider scope than the various auxiliaries, even though tense is realised in the verbal suffixes. Assuming that scope is reflected in the hierarchical structure, the underlying structure for (9b), for example, should be something like (10).[5]

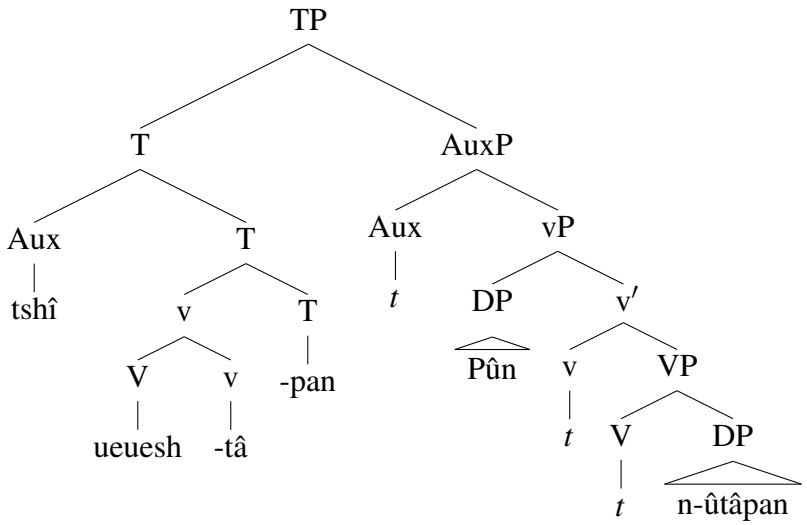
(10)



If (10) is the original structure of such a clause, then the derivation should alter the precedence relations between T and both Aux and the V-v complex, but Aux must continue to precede the verb. In other words, the linear order T Aux V-v must be changed to Aux V-v T. Multiple attraction by T can accomplish this. T first attracts Aux, which adjoins to the left of T. Then T attracts the verb, which tucks in between Aux and the attracting probe. The resulting structure is (11).

5 I assume that the "final" suffix *tâ-* serves as the head of vP, following Brittain (2003).

(11)



An analysis involving multiple head-movement must be preferred to obvious alternative analytic approaches. For example, Branigan et al. (2005) propose that complex verbs in Algonquian may be formed through remnant phrasal movement, rather than head-movement. The order of morphemes in (11) could be generated under such an approach if all arguments were extracted first from the verb phrase, and then if an AuxP containing all auxiliaries and the remaining verb were displaced to the left of T. But this approach requires that the surface verb be built by affixing T to a word contained in a phrase which sits several layers down inside a specifier for TP, which should be impossible generally. And this problem is compounded in structures in which the vP itself must first be constructed along the same lines, as discussed in section 2.3.

Another alternative which might be considered is that TP could be a head-final category, although other phrases in the language are clearly head-initial. In that case, remnant movement of an auxiliary phrase would not be necessary to construct a structure in which T might follow the verb, although movement of all arguments to a higher position would still be needed. However the problem of forming a word by attaching T to a verb located several phrases down would remain. What is more, such a structure would violate the Final-over-Final constraint (Biberauer et al. 2007), so it should be not be a possible configuration in the first place.[6]

By gathering a number of lower X^0 categories inside a single complex head, multiple head movement produces structures which are simultaneously word-like and phrase-like. As such, they interact with the morphological demands of their component units in a way which is rarely seen in other languages. The presence of

6 Thanks to Ian Roberts for this observation.

multiple heads in T makes it possible to accomodate the fact that aspectual heads can sometimes function as independant preverbs, while on other occasions they behave as the 'initial' component of a complex verb (Goddard 1990).

With the verb stem *nîtâutsh-*, a preceding aspectual morpheme is always realised as a preverb.

(12) a. nîtâutshû 's/he/it (anim) grows; s/he grows up'

b. *tshîshi* nitâutshu 's/he, it (anim) finishes growing'

In contrast, the verbal stem *kuâte-* is often combined with other material to form a complete word, as in (13a) and (13b).[7] When other material does not precede this stem, the aspectual *tshîshî* will be realised as an initial instead.

(13) a. matshi-kuâteu 'it is badly sewn (s/he sewed it poorly)'

b. minu-kuâteu 's/he sews it (anim) well'

c. *tshîshi*-kuâteu 's/he finishes sewing it (anim)'

Given that both the aspectual preverb and the verb itself are gathered in a single X^0 head, the algorithm which defines a verbal word can be quite simple. The T inflection must combine with the most closely adjoined head to begin to form a word unit. The right edge of the word is therefore the right edge of the inflectional suffix(es). But the left edge of this word must be identified by finding the left edge of one of the constituents inside T. If the verb stem itself provides a left edge, then the word will end there, as is the case in (12b). If the left edge is not found within the verb stem, then the next morpheme to the left may be included in the same word. This will be the situation for (13c).

The same variety of alternations is found with other semi-functional aspectual heads, too. Thus the preverb *nâtshi* 'come/go' is used sometimes as a preverb, as in (14), and sometimes as a verb initial, as in (15).

(14) a. *Nâtshi* *unaitsheme* *mâ.*
come/go set.a.trap PRT
'Go and set some traps!'

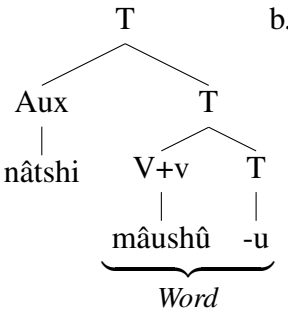
b. *Nâtshi* *mâushû*
go gather.berries
's/he goes berry picking'

7 The process which allows adverbial material to be realised as the verb initial is described in Branigan (2011).

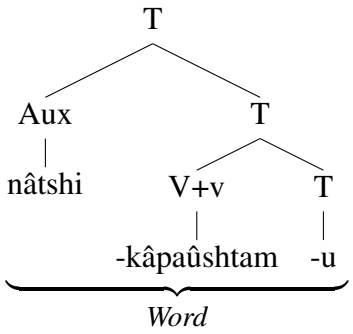
(15) a. *nâtshi-shku-eu*
go-pull/ride-SUF-3>3
's/he goes to pull him/her/it back'

b. *nâtshi-kâpaûshtam-*[u]
go-stand.upright-3
's/he approaches it, goes to stand up near it'

(16) a.



b.



The word boundary in (16a) is placed immediately to the left of the verb stem, because *nîtâutshu-* provides a left edge for words (and has no affixal variants). But in (16b), where the verb stem *-kuâte is* affixal, the word boundary may be placed a little farther to the left, outside the aspectual marker *tshîshi*, because no left word edge is provided by *-kâpaûshtam*.

The algorithm which identifies word boundaries does not seem to care how far from T the word boundary is located, as long as the resulting structure is morphologically acceptable. In the first case, the first adjunct is called the "initial". In the second case, the second adjunct on T plays the same role. In all cases, though, the basic syntactic structure remains the same. What is more, there is no need to maintain multiple categorial identities for preverbs which sometimes serve as verbal roots.[8] Their ability to serve this function simply follows from the position which they must occupy in order to allow T access to the verb.

As Goddard observes, the inclusion of preverbs inside a verb is obligatory when the conditions enabling it are satisfied. A form like (13c) cannot be freely replaced by a combination of the preverb and a freestanding verb, for example. This tells us that the grammar must include a statement to the effect that words include the maximal structure available in a given syntactic context, and that verb roots which do not provide a left edge must be preferred to their allomorphs in order to satisfy this general preference principle.

8 At least in Meskwaki, most preverbs can function in this way (Goddard 1990, Dahstrom 2000), so it is obviously a mistake to simply list them each as belonging to two separate categories.

When a preverb is not included in the verbal word, it remains accessible as a goal for later movement to a higher head—movement which resembles Roberts' (1997) notion of 'excorporation'. This is why preverbs can sometimes be found separated from their verbs (Dahlstrom 2006). Thus *tshî* and *uâ* in the textual examples in (17) are first attracted by the head which subsequently attracts the principal verb.[9] But a higher head in the left periphery subsequently detaches the modal preverbs from the edge of the head to which they have been adjoined and raises them still further, past intervening *minekâsh* and *utshimâua*, respectively.

(17) a. *Apû tshî minekâsh nûkushiân.*
neg can long.time be.visible-CJ/1s
'I cannot show myself for long.'

b. … *shûk*[u] *uâ utshimâua nâtâukushît?*
really want chief-obv be.met-CJ/3s
'since he really wants the chief to come fetch him'

2.2 Multiple attraction by Fin

In many Algonquian language, including Innu-aimûn, a separate set of verbal inflections called the *conjunct order* is used for verbs in embedded clauses (including conditionals), in questions and in sentences with negative focii: (19)- (18b). (The verb in clauses in affirmative, declarative, root clauses is said to be inflected in the 'independant' order.)

(18) a. *Ek*[u] *nemenua ukâuia nekânî, tshissenimeu*
then that.one mother-OBV that.absent know-3>3
nienekâtshiâkannitî ukâuia.
suffer-CJ/3' mother-OBV
'As for his mother, he knew she was abused.'

b. *Pien aimîtâkue, nipâ uîtamuâpan eshpannitî*
Peter call-DUB.CH/3>3 1-would tell-1/3
û-kûmisha.
3-uncle
'Had Peter called, I would have told him about his uncle.'

9 With conjunct order verbs like these, it is Fin which attracts multiply instead of T, as shown in section 2.2. But the basic pattern remains the same.

(19) *Tân etî-n anite?*
how do-CJ/2 there
'What are you doing?'

(20) ... *apû mînât nenua umatshunishiminua nenua.*
not give-CJ/3>4 that clothing that
'she did not give him the clothing'

A comparison of a small subset of the two sets of agreement suffixes is in (21).

(21)

Φ complex	Independant order	Conjunct order
1 sg.	-n	-an
2 sg.	-n	-(i)n
3 sg.	-u	-ât[10]
1 pl (excl.)	-nân	-ât
1 pl (incl.)	-nân	-âk^{u}
2 pl	-uâu	-ek^{u}
3 pl.	-uât	-aht
1 sg. + 3 sg.	-u	-k
2 sg. + 3 sg.	-u	-t
1 pl. + 3 sg.	-nân	-âtshît
2 pl. + 3 sg.	-uâu	-ek^{u}

It should be clear from this brief list that there is no plausible tidy morphophonemic alternation which connects the independant order morphology with the conjunct order. The two simply use a different set of suffixes. There is no obvious semantic significance to the use of conjunct order morphology instead of the independant order. The choice is simply controlled by the syntactic context.

The environments in which the conjunct order inflections are required are not obviously a homogenous set, but they appear to be contexts in which extra "Comp" structure is present. Full embedded clauses are normally ForceP (=CP) categories, and some interrogative clauses are ForceP, as well (Branigan 2010). And Brittain (1999) argues that negation markers in at least Innu-aimûn and Naskapi are base-generated in CP, as well. So a reasonable hypothesis would seem to be that the presence of a full ForceP category entails the use of conjunct order inflections.

Two clues to exactly what distinguishes the conjunct order verbs can be isolated by looking into how conjunct suffixes combine with other morphology. Verbs in the conjunct order cannot bear past tense suffixes, and they cannot be used together with pronominal clitics, as can be seen in (22) and (23).

(22) a. *Ishkuessat mû-e-**pan-at** kânakunâssa utâkûshît.*
girls eat-PAST-3>3 cookie yesterday
'The girls ate cookies yesterday.'

b. *Ishkuessat apû **tût** mû-â-ht kânakunâssa utâkûshît.*
girls not PAST eat-3>3 cookie yesterday
'The girls didn't eat cookies yesterday.'

(23) a. *Tân ishpish etusse-in?*
when work-CJ/2
'When are you working?'

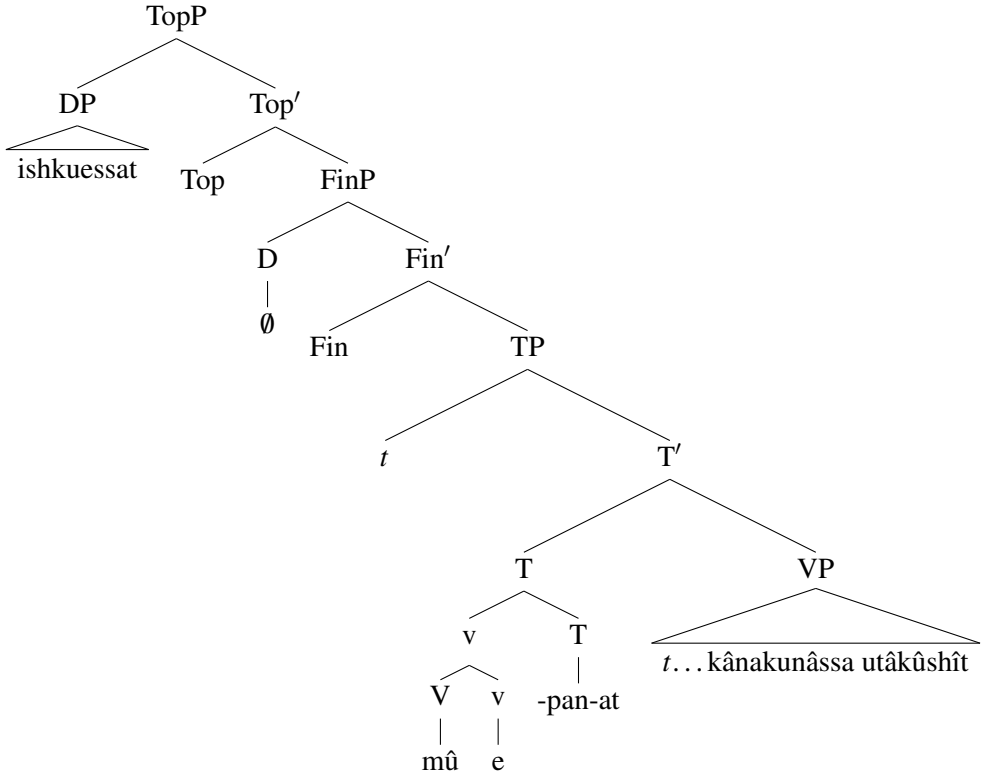
b. **Tân ishpish tshit-etusse-in?*
when 2-work-CJ/2S

These facts about conjunct order verb forms can be unified with the general observation that conjunct forms are associated with the presence of a Force head if we suppose that conjunct verbs raise to Fin rather than to T. If conjunct verbs raise to Fin, then the absence of clitic pronouns in the specifier of FinP can be attributed to the sort of specifier-head "doubly filled Comp´´ effect which is sometimes observed with heads in the "left periphery´´. The different set of agreement inflections used on conjunct verbs are simply the direct manifestations of Fin as suffixal morphology, when the verb is attached to Fin. And as the verb does not raise to T, there is no possibility for a past tense suffix to appear on a conjunct order verb.

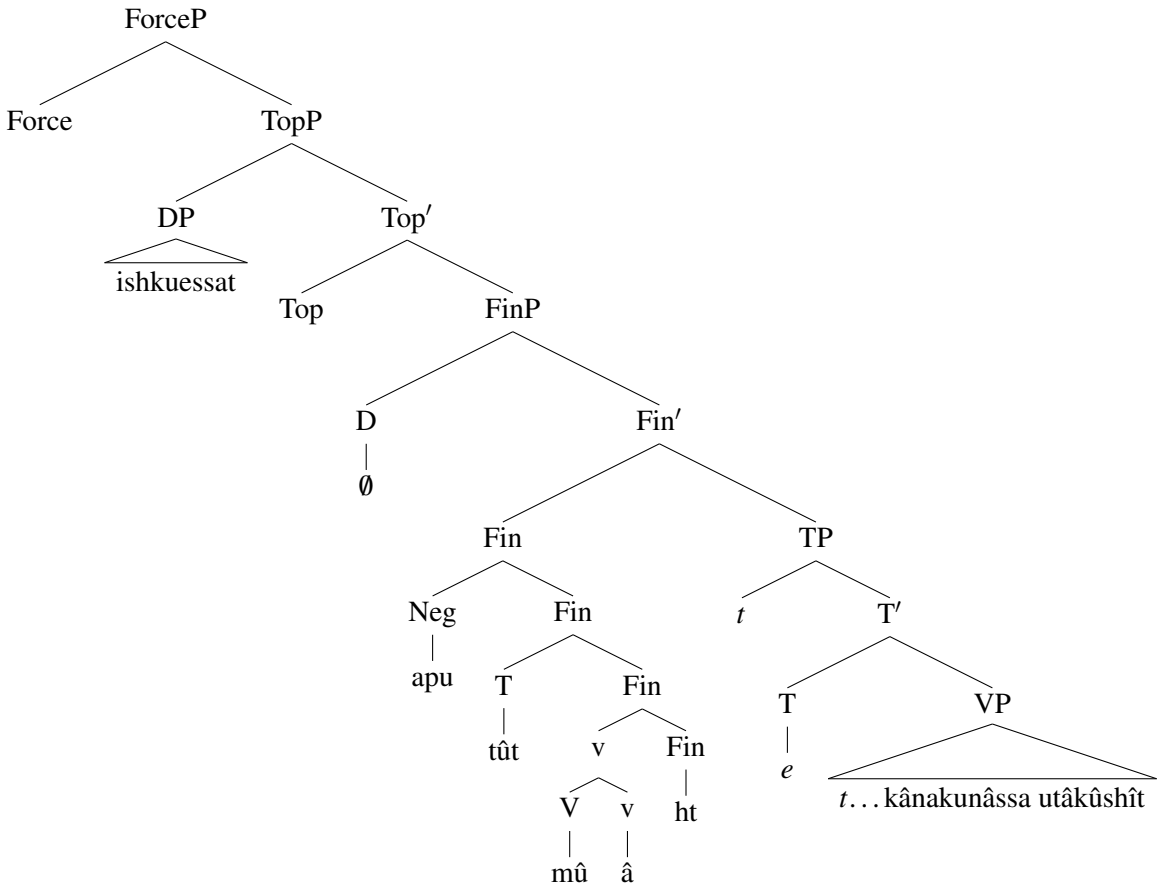
To summarise, an account of the major contrasts between verbs in the independant order and conjunct order verbs involves two premises. When Force is present in a clause, it requires that the Fin head be realised as overt morphology. The absence of pronominals clitics follows directly. And as a non-null Fin is realised as a verbal suffix (from a distinct set), the verb must raise directly to Fin, rather than to T.[11] The different clause structures associated with independant and conjunct orders in (22) are then as shown in (24).

11 See Branigan (2011) for the details of how agreement suffixes in Fin are related to the major nominal constituents of the clause.

(24) a. *Independant order clause structure*



b. *Conjunct order clause structure*



2.3 Multiple attraction by *v*

The idea that a single head may attract multiple lower heads is essential for explaining a second set of patterns within the Innu-aimûn verbal morphology. Complex verbs can be formed from a verbal stem, followed by a nominal stem, and concluding in verb-forming affixes. Examples appear in (25).

(25) a. nâtuâ-kât-eshinu ‘s/he breaks his/her leg’

b. nâtuâi-apit-eshinu ‘s/he broke his/her tooth’

c. nâtuâ-kut-eshinu ‘s/he broke his/her nose’

d. pâkunam^{u} ‘s/he skins it’

e. pâkuna-pish-ueu ‘s/he skins a lynx’

f. pâkun-âpush-ueu ‘s/he skins a rabbit’

g. pâkun-âtshesh-ueu ‘s/he skins a fox’

(26) a. petuta-i-nâpeu-eu ‘she walks in this direction with a man (petut- ‘in this direction’, nâpeu ‘man’)’

b. kushpitâ-ishkueu-eu ‘s/he goes into the bush with a woman’

c. akushita-ishkueu-eu ‘s/he goes upstairs with a woman’

This pattern is usually described as noun incorporation. In contemporary Innu-aimûn, the incorporated nouns fall into two general classes. The (25) examples incorporate inalienably possessed body parts or species of fauna. The incorporated nouns in (26) are comitative arguments, which refer to someone who accompanies the theme argument. Both can be said to originate as or with the direct object of the verb, and as such, they pattern with syntactically incorporated arguments in Mohawk or Southern Tiwa (Baker 1988).

Inanimate nouns are not normally incorporated in the same way. Instead, there is a set of inanimate classifiers which provide the incorporated content. Incorporated classifiers have a comparable range of interpretations as incorporated animate nouns. They can characterise an object or unaccusative subject, or they can classify an implied instrumental. In the latter case, I take it that they have a similar syntactic origin to that of animate comitatives.

(27) a. kâshî-âpishk-aim^{u} ‘s/he dries something(rock/mineral)’

b. tshish-âpishk-isham^{u} ‘s/he heats something (rock/mineral) up’

c. pâkun-âshku-aieu ‘s/he strips the bark off a birch tree’

(28) a. mitshim-aim^{u} ‘hold something in place, using an object’

b. mitshim-âshku-aim^{u} ‘hold something in place, using a wooden object’

c. minuaim^{u} ‘straighten something’

d. minu-âshku-aim^{u} ‘straighten something with a stick’

This Algonquian multiple-root pattern differs from the cross-linguistically common phenomenon of noun incorporation in one important respect. Consider the structure of (26b). One might suppose that *ishkueu* is incorporated by the verb root to form the base for the verbal morphology, just as the verbal roots do in examples like (29). (The first three examples are from Baker (1988)).

(29) a. *Yao-wir-a?a* *ye-nuhs-nuhwe?-s* (Mohawk)
PRE-baby-SUF 3FS/3N-house-like-ASP
'The baby house-likes.'

b. *Ti-seuan-mũ-ban.* (Southern Tiwa)
1SS:A-man-see-PAST
'I saw the man.'

c. *Nerrivi-liro-poq.* (Greenlandic Eskimo)
table-make-3SS
'He set the table.'

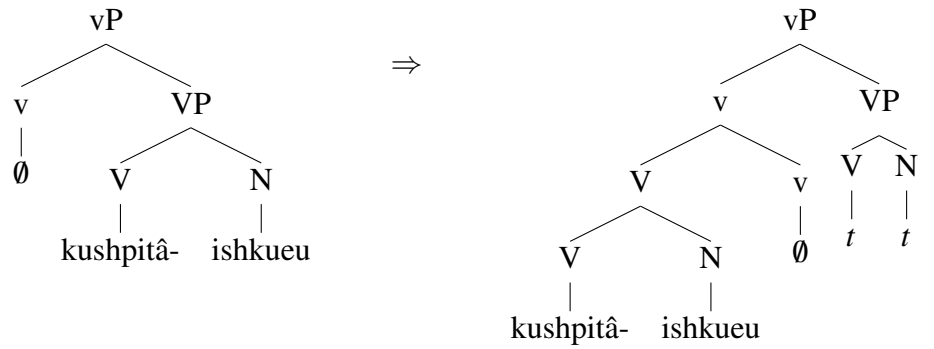
d. *ətləg-ən* *qaa-nmə-g?e* (Chukchi; from Polinsky (1990))
father-ABS reindeer-kill-AOR.3s
'The father killed a reindeer.'

But notice that the order of the two roots is backwards in the Innu-aimûn, compared with the order in Southern Tiwa, Cayuga, or Inuktitut, or Chukchi. In Baker's (1985) sense, Innu-aimûn verbs seem to violate the "Mirror Principle", whereby morphological order reflects the syntactic derivation. To see this more clearly, consider what syntactic structure could give rise to (26b). The incorporated noun would originate as the complement to the verbal root (V), which would then raise to a higher *v*, as usual.

(Of course, this is the result only if the verbal root acts as a *prefix* for the incorporated noun. If the verbal root were suffixal, then the actual morpheme order could not be generated even at this early stage.)

But further derivational morphology must still be supplied to complete the verb. In this case, the "final" ∅, which itself supports tense and agreement inflection, must be added to the verb. Following Brittain (2003), we suppose that finals typically originate in the *v* position. So movement of the multi-root base *kushpitaishkueu* up to *v* should complete the process of building the entire verb. But this time, the affix to which a base is raised must be realized on the right, as a suffix.

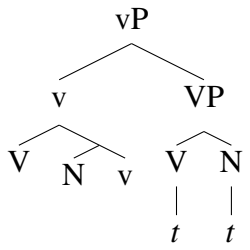
(30)



So noun incorporation is realized with prefixation, but V-v structures express themselves with suffixation. This assymetry is not found in the other noun incorporation languages in (29).

Given the possibility of multiple head movement, a better approach is available. Suppose that *v* may attract both the lexical verbal root V and its nominal complement, in that order. Then structures like (31) can be formed from a single *v* suffix and two lexical heads.

(31)



2.4 Multiple attraction by *p* (-ît)

Oxford (2011b) suggests that the locative suffix *-ît* could be treated as belonging to the *p* category, analogous to *v* in verb phrases or *n* in nominals. In that case, a derivation like that which we find in verbs can be identified in complex prepositions, as well. Consider Oxford's examples (32a).

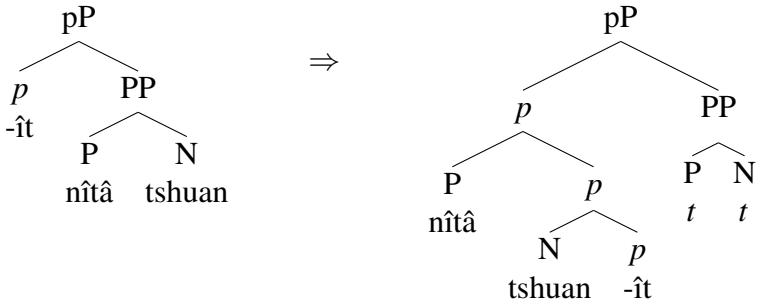
(32) a. nîtâtshuanît 'at the foot of the rapids' (*nîtâ-* 'at the foot' + *tshuan* 'rapids')

b. âpitûtâtît 'midway on a wooden thing' (*âpitû-* 'midway' + *itât* 'wood')

As with complex verbs, these prepositions appear to incorporate a nominal which is then sandwiched between the prepositional root and a final suffix. If *p*, like *v*, is

able to incorporate both the head of its own complement, and then the nominal head of the complement to P, then the underlying structure for (32a) will be (33a), with the derived structure (33b) formed by multiple incorporation.

(33)



2.5 Multiple attraction by *n*

Just as verbs are formed with visible *v* 'finals' in Innu-aimûn, nouns are formed with a visible *n*. Often, in fact, there is a matching nominalisation for given *v* finals. For example, verbs which refer to the use of a tool to accomplish an action are regularly formed with the (complex) *-aim* final.[12] And nouns referring to the instrument being used for a specific activity are formed with the *-aikan* ending.[13]

(34) a. kâshkâshkaim^{u} 's/he scrapes'

b. kâshkâshkaikan 'scraper'

c. akaim^{u} 's/he takes a shovelful'

d. akaikan 'dustpan'

Notice that the *-aikan* nouns are not formed from their verbal counterparts. Instead, both noun and verb take the same root (*kashkashk-* or *ak-* in (34)) and add distinct category-forming suffixes to form the full words.

And just as the *-aim* verbaliser can attract multiple heads, so can its nominalising counterpart *-aikan*. Thus, simple verbs can be formed by adding *-aim* to *kuetip-* and *nak-* in (35). And the same *v* can attract multiple heads to form the more complex

12 The underlying form of such finals is actually bimorphemic, with *-ah* 'tool-usage' and *-am* combined and altered by regular phonology to *-aim* (MacKenzie 1980)

13 Again, the underlying form is bimorphemic, with *-ah* joined to *akan*. The text discussion could in fact refer more accurately, but less transparently, to the alternation of verb-forming *-am* and noun-forming *-akan*.

verbs in (36). (The classifier *-âshku* 'tree-/stick-like' is incorporated in these forms, as an object or instrument, respectively.)

(35) a. kuetipaim^{u} 'turn it over'

b. nâkaim^{u} 'stop something from moving, using an object'

(36) a. kuetipâshkuaim^{u} 'turn it (tree-like) over'

b. nâkaiâshkuaim^{u} 'hold something in place with a stick'

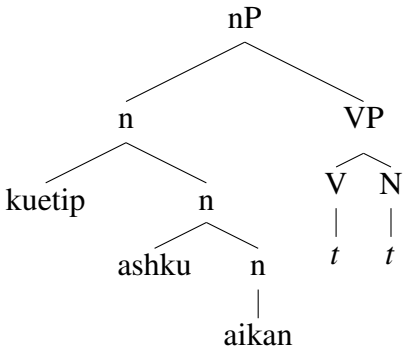
And *-aikan* does exactly the same, in (37).

(37) a. kuetipâshkuaikan 'hook for handling logs'

b. nâkaiâshkuaikan 'end post support for a woodpile'

The structure of nP for (37a) will then be (38).

(38)



2.6 The Algonquian macroparameter

To sum up the results of the preceding sections, multiple head movement is triggered in Innu-aimûn by functional heads of the categories T, Fin, *v*, *p*, and *n*. None of these heads must do so in every context, but all are capable of doing so when necessary in order to gain access to the right sort of base for the head in question to attach to. Furthermore, as this group of categories appears to include all affixal heads in the language, a further conclusion which should be drawn is that it is a general property of Innu-aimûn that any affixal category has the potential to attract multiple heads when necessary.

The next question is how to characterise this grammatical state of affairs. If we accept Baker's macroparametric model, then the obvious answer is that there is a

macroparameter which applies to all functional categories in the language. We might characterise this as (39).

(39) *The Algonquian Macro-Parameter* (AMP)

For all functional categories F, F attracts multiple heads. (True/False)

The positive setting then characterises Innu-aimûn. English, ǂHoan, and Perenakan Javanese will all set (39) to False.

Alternatively, if we adopt Kayne's premise that variation is always to be captured by microparameters, then Innu-aimûn grammar will be the result of positive settings to the group of parameters in (40).

(40) a. Fin attracts multiple heads (True/False)

b. T attracts multiple heads (True/False)

c. *v* attracts multiple heads (True/False)

d. *p* attracts multiple heads (True/False)

e. *n* attracts multiple heads (True/False)

The microparametric account might seem initially to require more UG resources, but in fact the various microparameters listed in (40) will be required in any case, even in a macroparametric model, given the existence of languages like ǂHoan and Perenakan Javanese. So the purely microparametric model is actually the more parsimonious.

Nevertheless, an analysis based on the macroparameter (39) captures the generality of multiple head-movement in Innu-aimûn, while the Kaynean alternative does not. And this difference becomes more significant when we consider how other Algonquian languages compare to Innu-aimûn in their use of multiple head-movement.

The Algonquian language family covers a vast geographic range, as shown by the map in (41).[14] Innu-aimûn (or Montagnais) is spoken in the northernmost area of this range, and belongs to the Central Algonquian group. The original proto-language for this family is estimated to have been spoken between two and three thousand years ago. According to Goddard (1994), Alqonquian speakers spread from west to east, with the resulting languages differing largely on the basis of how long their populations have been separated. Blackfoot (the westernmost Algonquian language) is the most divergent, and the smallest differences are found within the Eastern Algonquian subgrouping.

14 The map is taken from Oxford (2011a), based on an earlier map in Mithun (1999).

(41) *The geographic range of Algonquian languages*

As one would expect, given the distances involved, the different groups of speakers of Algonquian languages have also occupied a wide range of ecological niches, both prior to and after the European invasion. Some Eastern Algonquian populations were agriculturalists. Cheyenne, Blackfoot, and Western Cree populations depended on bison for much of their sustenance. Northern populations' economies have traditionally been of the inland hunter-gatherer variety. And populations in different regions have shared areal contact with very different types of other languages, from the Salish languages in the northwest, to Inuktitut in the north, and Souian and Iroquoian in large areas in the middle. In short, the groups of Algonquian speakers have lived in very different ecological and social environments, and they have been dispersed for a very long time.

This history is reflected in numerous ways in the histories of the languages. There are lexical differences between all Algonquian languages, and these appear to reflect the social and ecological histories generally in unsurprising ways. There are phonological differences, which one would also expect, given the passage of time from proto-Algonquian. There are also morphological differences, often involving the inflectional morphology.

It is therefore remarkable, given this history, that *all* Algonquian languages appear to make use of multiple head-movement in essentially identical ways. Ev-

ery Algonquian language has complex words which follow the tripartite pattern: initial-medial-finals. And to the extent I have been able to determine from existing descriptions, all of the languages use these complex forms to express a similar range of complex ideas. It would take us far afield to examine these patterns in detail in a significant number of these languages, but the examples in (42) suggest how similar they are. Example (42a) comes from Delaware, an Eastern Algonquian language, and reflects multiple attraction by *v*, while (42b), from Blackfoot (Western Algonquian) shows how T can attract both an inceptive auxiliary and then the verb.

(42) a. moon-aalaxkwsiit-ee-w (extract-bean-SUF-3) 's/he digs for beans' (O'Meara 1990)

b. áak omatap-ikokoto-istsi (FUT start-freeze-SUF) 'they are starting to freeze' (Johansson 2011)

The robust, long-term stability of multiple-head movement across categories in Algonquian grammars needs to follow from something. In a pure microparametric model, where the setting for each functional head needs to be established independantly, there is no reason to expect this degree of grammatical stability. What we would expect is the opposite—some microparameters might take on different settings over time, while others might remain the same. In a macroparametric model, the explanation for the pervasive and stable Algonquian pattern does not follow immediately either, but there is a reasonable expectation that we might find one. At the very least, we might expect that a macroparameter setting might resist being affected by the smaller scale changes in the primary linguistic data (PLD) which should lead to a resetting of a single microparameter.

3 The learnability problem

To this point, the discussion has been mostly descriptive, with the goal of demonstrating how a specific overriding principle pervades Algonquian morphosyntax. But this result means that children who acquire an Algonquian language must be able to identify this general principle, unconsciously, and to fix it as a permanent feature of their individual I-languages. So there must be a learning path/algorithm which takes the linguistic data (PLD) which Algonquian children are exposed to and produces a macroparameter setting.

Let us consider what this might involve in the simplest case. If we simply follow the general lines of Baker's parametric model, we would naturally posit a fixed, genetically-based macroparameter like AMP. A positive setting for AMP will then produce a language like Innu-aimûn. But this parameter must still co-exist with parameters with less pervasive effects, given the existence of languages like

ǂHoan and Perenakan Javanese. So at least the microparameters in (43) must also be provided by universal grammar.

(43) a. Fin may attract multiple heads (T/F)

b. *v* may attract multiple heads (T/F)

We cannot exclude the likelihood that UG provides other microparameters similar to those in (43) which characterise the attraction properties of other functional heads, even if no languages have yet been shown to instantiate a positive setting for such microparameters. In order to avoid oversimplifying the acquisition scenario, let us therefore assume that other functional categories feature in parameters like (44).

(44) a. *T* may attract multiple heads (T/F)

b. *n* may attract multiple heads (T/F)

c. *p* may attract multiple heads (T/F)

d. *a* may attract multiple heads (T/F)

e. *D* may attract multiple heads (T/F)

f. *etc.*

The question now is how a child may attain the correct settings for Innu-aimûn, ǂHoan, or Perenakan Javanese given the appropriate PLD.

Let us suppose that parameter setting is a response to a child's successful or unsuccessful attempt to parse an expression in the PLD. Unsuccessful parses serve as triggers to reset existing parameters to ensure that the child's grammar matches the PLD better.

Consider first the case of a child developing the presence of Innu-aimûn PLD. The PLD will include data like (45) as well as (46). The former is consistent with both positive and negative values of both AMP and the microparameters in (44), so it presumably plays little role in establishing the correct parameter settings. But (46a) can be parsed only if the grammar allows *v* to attract multiply, (46b) requires Fin to attract multiple lower heads, and (46c) needs T to attract multiply.

(45) *Ni-mûpishtue-pan Pûn.*
1-visit-3/PAST Paul.
'I visited Paul.'

(46) a. *Ni-mû-tiku-mâ-u.*
1-eat-caribou-V-AFF-3
'I eat caribou.'

b. *Ekue kâ pâpatât*
then past run.dup-CJ/3
'Then he ran.'

c. *Nuî kutuenikâtuâuat nit-amishkumat.*
1-want build.fire.to.warm.s.t-1>3p 1-beavers
'I want to make a fire (to cook) my beavers.

So each of (46a-c) can potentially serve as triggering data leading the child toward an Innu-aimûn mature grammar.

However, if we try to pin down the exact course of parameter setting, problems emerge quickly. For one thing, we must isolate the relationship between the AMP and each individual datum. What exposure to the data in (46) is necessary to allow a positive value to be given to AMP. We might imagine, in the ideal situation, that a single datum would be sufficient so that exposure to (46c) would be sufficient, for example. As a negative setting for both AMP and the (43b) parameter will prevent (46c) from being parsed, the LAD should respond to this datum by resetting one or the other.[15] If AMP is reset, then our hypothetical Innu child arrives at the correct grammatical state immediately. If, instead, the (44a) microparameter is reset to accomodate the data, the LAD will still need to do more work to accomodate subsequent data.

Subsequent exposure to more data like (46c) will have no effect on the AMP once the microparameter controlling multiple attraction by T is set to positive. In order to allow the AMP setting to be changed after this point, data like (46a) or (46b) will be necessary. And there is actually no guarantee that even these will be sufficient, since the option is always available for the LAD to reset the corresponding microparameter instead. If the choice of which parameters to change is free, then the AMP must fail to be affected by the (46) data in a small, but not insignificant, proportion of the population.

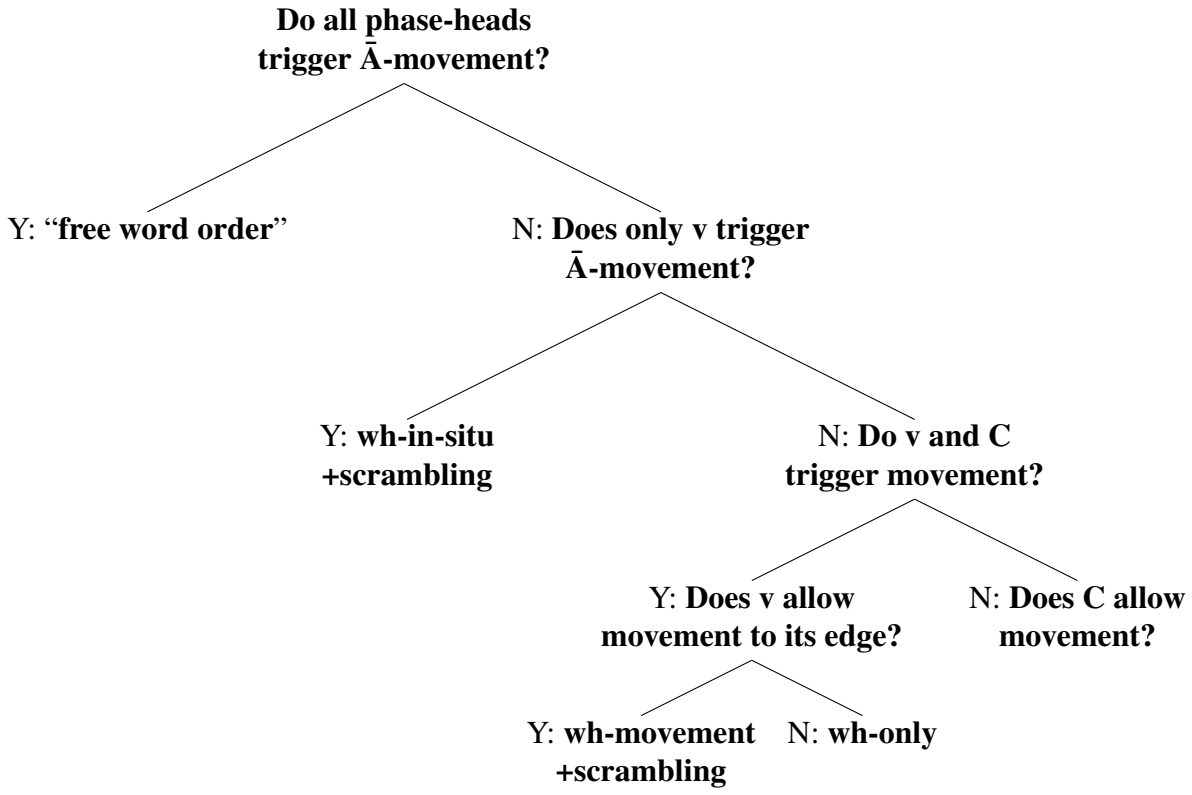
The reader will probably have already observed at this point that modelling the interaction of microparameters with the AMP in this scenario simply highlights the central insight in Kayne's (2000) critique of the notion of a macroparameter. If a cluster of microparameters can accomodate the grammatical behaviour of a

15 It makes no difference here whether a parsing failure triggers an actual change in the grammar settings (Wexler & Culicover 1980) or simply makes it possible for alternative grammars which might produce a successful parse to 'grow' more quickly, as proposed by Gibson & Wexler (1994), Clark & Roberts (1993) and others.

language, then postulating a macroparameter to achieve the same effect adds no value to a description of the workings of that language. And yet the argument for an Algonquian macroparameter like AMP which was presented in section 2.6 remains intact. The implication is that a model in which macroparameters and microparameters compete freely to handle the PLD must be abandoned, in favor of one in which no such competition takes place.

Roberts' (2011) model of structured parameter space has this character. For Roberts, macroparameters are *emergent* concepts which arise from the LAD seeking to optimise the search space within which parametric choices operate. The search space is examined by traversing decision trees which organise parameter settings hierarchically. Macroparameters can be identified with the root of these decision trees. How this works can be best understood with Roberts' own example of a potential "discourse configurational" macroparameter, where a discourse configurational language is one in which *v*, C and D triggers Ā-movement, and the result is a high degree of freedom of word order. Roberts' characterises such a language as reflecting a positive answer for the root in (47).

(47)



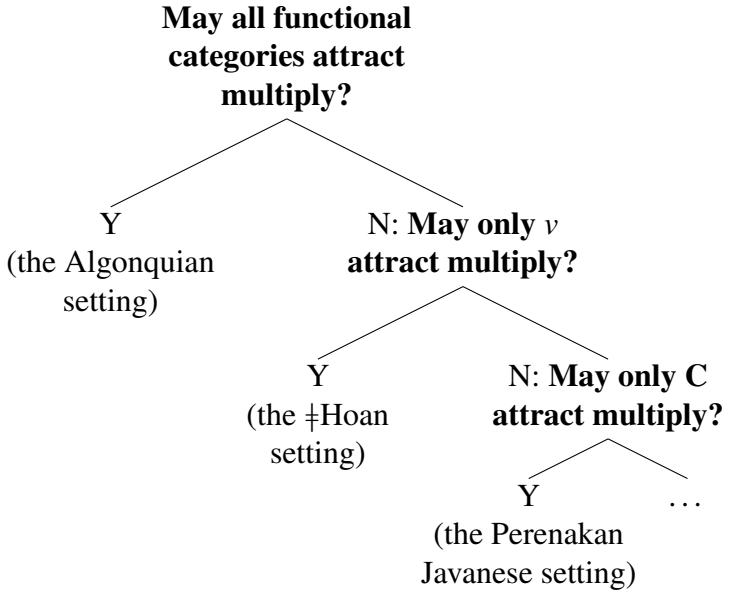
Crucially, in this model, the lower parametric choices are only available if, and

after, a negative value is given to the higher parametric choices. If the answer at the root is positive in (47), then the LAD never has to ask about the specific parametric values for v or C.

Roberts' model allows macroparameters to be activated at an earlier stage than the less general microparameters. Macroparameters set up an overarching grammatical principle, which can be modified for smaller regions of the grammar only if positive evidence is found to require it.

Consider now how this approach to parameter setting might operate to give the effects of an Algonquian macroparameter. The macroparameter itself will constitute the root of a choice tree which is traversed from top to bottom. For our purposes, the specific questions to be asked as we descend the tree are immaterial, but in order to have a concrete example at hand, let us suppose the structure (48):

(48)



Consider how the positive Innu-aimûn data in (46) will be accomodated under this approach. When an example like (46a) is encountered by the LAD, the only question asked is whether this data can be parsed with the initial unmarked negative setting for the macroparameter. And since it cannot, the macroparameter value is changed to positive. Now any subsequent data like (46a) will be parsed successfully. What is more, all the remaining data in (46) will now be accepted by the new grammar, as well because every type of functional category is now expected to optionally attract multiple lower heads. As for the remaining, neutral types of data in (45), since multiple attractions are never required by the macroparameter choice, these data remain unproblematic.

The problem with this model comes not from languages of the Algonquian type, but rather from the more limited multiple head-movement languages like ǂHoan and Perenakan Javanese. Children acquiring the latter will be faced with examples like (2) (repeated).

(2) a. *Tono pernah gelem isa ngomong Inggris.*
Tono PERF want can speak Inglish
'Tono has wanted to be able to speak English.'

b. *Pernah Tono gelem isa ngomong Inggris?*
PERF Tono want can speak English
'Has Tono ever wanted to be able to speak English?'

c. *Pernah gelem isa Tono ngomong Inggris?*
PERF want can Tono speak English
'Has Tono ever wanted to be able to speak English?'

Given the decision tree in (48), on hearing an example like (2c), the LAD of a Perenakan Javanese child will register a parsing failure, and respond by setting the value of the macroparameter to positive.

And this value will remain constant, although lower ranked parameters may be adjusted as new positive data is experienced. But in this case, there can be no positive data which will undermine the macroparameter. The macroparameter does not *require* multiple attractions, so any sentence where no multiple attractions take place will be successfully parsed. In effect, by placing the choice of whether to activate a macroparameter at the top of the decision tree, Roberts ensures the existence of a new class of "poverty of the stimulus" problems. Once the macroparameter is turned on, there is never data available to allow it to be turned off again.

Another way to conceptualise the general issue is in terms of the *subset principle*, which is supposed to minimize the risk of overgeneralisation in language acquisition (Berwick 1985). If the LAD always prefers to set parameters which have limit effects over parameters with more pervasive influence, then the use of numerous microparameters will always be preferred to a single macroparametric setting in constructing any particular grammar. But the Algonquian evidence still seems to require that something like AMP be available, and active.

To sum up, the problem is this: if the LAD is able to set microparameters in preference to a macroparameter, the macroparameter becomes superfluous. If the macroparameter has priority, then more restrictive languages which express the macroparametric option only in a subset of the grammatical contexts become unlearnable.

Nor is the general problem likely to be resolved by recourse to a more sophis-

ticated learning theory. I have chosen to illustrate the issues within an idealised scenario in which a single datum triggers a parameter resetting. More complex, Bayesian models have been shown to offer a resolution of other problems in learning theory, most notably by Yang (2002). But in this case, the problem is not in the relation of data to the parametric choices—which is quite simple—but rather in the structure of the search space itself. Rethinking the relationship between the data and individual parameters is unlikely to ease this tension.

4 Proposal

My proposal starts from Robert's observation that the notion of a macroparameter is itself in need of clarification. Optimally, as Roberts also notes, a macroparameter should not be a Baker-style primitive of grammatical theory. It should instead be something which reflects how more atomic concepts (microparameters) interact with the remaining components of the language faculty. Ideally, macroparameters might be found to reflect the interaction of core syntactic properties with "3rd factor" phenomena (Chomsky 2005).

For the specific macroparameter at the heart of this discussion, what has been identified is a seeming parodox in the ordering of how parameters are set. In some cases, we want to say that the general statement captured by the AMP has priority in learning; in other cases, it must not, and specific category-based statements must take the lead.

If we are concerned with ordering in an acquisition process, then one candidate for a "3rd factor" effect could be the maturation of the child herself. A developing child has different abilities and capacities at different ages. And the acquisition process itself entails a certain timeline, since the child will not yet have developed certain linguistic abilities (or set some parameters) before a certain point.

If the primacy of macro- and micro-parametric interaction with the PLD seems to be in conflict if we consider them together, we may find a resolution to the paradox if we allow each type of parameter to engage with the PLD at different periods in the child's development. Suppose that AMP were to engage with the PLD without the complications introduced by the existence of overlapping microparameters. Then a child developing in an Innu linguistic environment would simply have to evaluate whether the AMP should be set to a positive value. And this must clearly be the right response in this particular context, although how it works out in practice will depend on the learning algorithm being used.

Now suppose that at a certain point, the macroparameter ceases to play a role in the acquisition process. By this, I mean simply that the state of the AMP can no longer be affected by new data; any value which the AMP has taken on already will remain in place, and it will form part of the child's final grammatical state. Suppose

further that the individual microparameters come into play at this point. There there are two situations to consider. If the AMP already has a positive value, then the individual microparameters are superfluous because all functional categories will already be associated with the ability to attract multiply, and no new positive data can cancel this out anyway. But if the AMP has emerged from the first stage pristine, with a negative value, then there is still work for the individual microparameters to do. And at this point, positive evidence may lead the LAD of a ǂHoan child to set (43b) to a positive value, or for a Perenakan Javanese child to turn on (43a).

Important empirical questions remain to be answered under this scenario, of course. At least, we would want to know how much positive data is required to activate AMP before stage 2 begins. But both types of multiple head-movement languages appear to be learnable in such a model, which is not true of the models discussed above.

It only remains to identify the nature of stages 1 and 2. And at this point, the very content of the AMP suggests how the two stages should be understood. The AMP provides a general statement which lumps all functional categories together with respect to a specific formal property. It fails to treate the distinction between T and *v*, for example, as significant. One obvious reason why the AMP might not recognise a categorial difference is that the LAD might not yet have clearly established what the important categorial differences are at this point in the acquisition process. In other words, it doesn't yet know what distinguishes T from *v*, or Fin from *p*, so it cannot use such knowledge in a grammatical rule.

The AMP should then not be considered as a distinct type of parameter. Instead, it is just the same type of parameter as the various individual microparameters, but one which is operating in a less richly specified state of grammar. As in Roberts' model, this macroparameter is an emergent phenomenon of grammar. But unlike Robert's putative macroparameters, the AMP emerges from innocence, not knowledge.

Stage 2 will now occur automatically. As the child succeeds in identifying the functional categories in her PLD, she will automatically incorporate this knowledge in the formulation of the parameters controlling multiple attraction, fragmenting the AMP into a set of more specific microparameters, unless it has already taken on the general, positive macroparametric value.

In short, the child who learns about multiple attraction before functor categories will acquire an Algonquian-style polysynthetic language. A child who acquires distinctions in the functional inventory first can only acquire a language with distinct multiple-attracting heads.

Finally, we may consider why the Algonquian languages have exhibited such robust tenacity in their use of tripartite word structures. While I can only speculate on this matter, it seems reasonable to attribute this propensity to two linked, but independant factors. The first must be the particular data in the PLD which enable the

AMP to be activated so quickly, and in the absence of categorial clarity. Presumably the use of chunks of structure which simultaneously constitute a prosodic word and cannot be generated without a multiple-attraction derivation are effective stimuli. At the same time, the fact that the multiple-attraction parameter is *not* fragmented in these languages should play a role both in ensuring the frequency of such trigger data and in minimising the opportunities for language change in the long run.

References

Baker, Mark. 1985. The mirror principle and morphosyntactic explanation. *Linguistic Inquiry* 16. 373–461.

Baker, Mark. 1988. *Incorporation: A theory of grammatical function changing*. Chicago: University of Chicago Press.

Baker, Mark. 1996. *The polysynthesis parameter*. Oxford University Press.

Baker, Mark. 2002. *The atoms of language: The mind's hidden rules of grammar*. Basic Books.

Berwick, R.C. 1985. *The acquisition of syntactic knowledge*. The MIT press.

Biberauer, T., A. Holmberg & I. Roberts. 2007. Disharmonic word-order systems and the final-over-final-constraint (fofc). *Proceedings of XXXIII Incontro di Grammatica Generativa* 86–105.

Bloomfield, Leonard. 1927. The word-stems of Central Algonquian. In *Festschrift meinhof. beiträge zur afrikanischen sprachwissenschaft.*, 393–402. Hamburg.

Bloomfield, Leonard. 1962. *The Menomini language*. Yale University Press.

Branigan, Phil. 2010. *Provocative syntax* Linguistic Inquiry Monographs. Cambridge, MA: MIT Press.

Branigan, Phil. 2011. Issues in Innu-aimûn morpho-syntax. Ms. Memorial University.

Branigan, Phil, Julie Brittain & Carrie Dyck. 2005. Balancing prosody and syntax in the Algonquian verb complex. In *Proceedings of the 36th algonquian conference*, .

Brittain, Julie. 1999. *The distribution of the conjunct verb form in Western Naskapi and related morpho-syntactic issues*: Memorial University of Newfoundland dissertation.

Brittain, Julie. 2003. A distributed morphology account of the syntax of the Algonquian verb. In Stanca Somesfalean & Sophie Burrell (eds.), *Proceedings of the 2003 annual conference of the canadian linguistic association*, 26–41. Département de linguistique et de didactique des langues: Université du Québec à Montréal.

Bruening, Benjamin. 2009. Algonquian languages have A-movement and A-agreement. *Linguistic Inquiry* 40. 427–445.

Chomsky, N. 2005. Three factors in language design. *Linguistic inquiry* 36(1). 1–22.
Cinque, Guglielmo. 1999. *Adverbs and functional heads: A cross-linguistics perspective* Oxford Studies in Comparative Syntax. Oxford: Oxford University Press.
Clark, Robin & Ian Roberts. 1993. A computational model of language learnability and language change. *Linguistic Inquiry* 24. 299–345.
Cole, Peter, Yurie Hara & Ngee Thai Yap. 2008. Auxiliary fronting in Perenakan Javanese. *Journal of Linguistics* 44. 1–43.
Collins, Chris. 2002. Multiple verb movement in †Hoan. *Linguistic Inquiry* 33(1). 1–29.
Dahlstrom, Amy. 1995. *Topic, focus and other word order problems in Algonquian* Voices of Rupert's Land. Winnipeg, Manitoba: Linguistics Department, University of Manitoba.
Dahlstrom, Amy. 2006. Preverbs revisited: Capturing dimensions of wordhood. Talk presented at the 38th Algonquian conference. Vancouver.
Dahstrom, Amy. 2000. Morphosyntactic mismatches in Algonquian: affixal predicates and discontinuous verbs. In *Papers from the regional meetings. chicago linguistic society.*, .
Drapeau, Lynn. 1999. *Dictionnaire montagnais-français*. Presses de l'Université du Québec.
Gibson, E. & K. Wexler. 1994. Triggers. *Linguistic Inquiry* 25(3). 407–454.
Goddard, Ives. 1990. Primary and secondary stem derivation in Algonquian. *International Journal of American Linguistics* 56. 449–483.
Goddard, Ives. 1994. The west-to-east cline in Algonquian dialectology. In William Cowan (ed.), *Actes du vingt-cinquième congrès des algonquinistes*, 187–211. Ottawa: Carleton University.
Johansson, Sara. 2011. Relative clauses, or clause-sized nominalization? a consideration of Blackfoot. Unpublished ms., Memorial University.
Junker, M.O. 2004. Focus, obviation, and word order in East Cree. *Lingua* 114(3). 345–365.
Kayne, Richard. 2000. *Parameters and universals*. Oxford: Oxford University Press.
MacKenzie, Marguerite. 1980. *Towards a dialectology of Cree-Montagnais-Naskapi*: University of Toronto dissertation.
McGinnis, Martha. 1995. Fission as feature-movement. *MIT Working Papers in Linguistics* 27. 165–187.
Mithun, Marianne. 1999. *The languages of native North America*. Cambridge University Press.
O'Meara, John. 1990. *Delaware stem morphology*: McGill University dissertation.
Oxford, Will. 2011a. Patterns of contrast in Algonquian vowel systems. Talk given at Memorial University.

Oxford, Will. 2011b. The syntax of Innu-aimun locatives. In *UBC Working Papers in Linguistics, vol. 31: The proceedings of WSCLA 16*, .

Polinsky, Maria S. 1990. Subject incorporation: Evidence from Chukchee. In Katarzyna Dziwirek, Patrick Farrell & Errapel Mejias-Bikandi (eds.), *Grammatical relations: A cross-theoretical perpective*, 349–364. Stanford Linguistics Association.

Richards, Norvin. 1997. *What moves where in which language*: MIT dissertation.

Ritter, E. & S.T. Rosen. 2005. Agreement without A-positions: Another look at Algonquian. *Linguistic inquiry* 36(4). 648–660.

Rizzi, Luigi. 1997. The fine structure of the left periphery. In Liliane Haegeman (ed.), *Elements of grammar*, Dordrecht: Kluwer.

Roberts, Ian. 1997. Restructuring, head movement and locality. *Linguistic Inquiry* 28(3). 423–460.

Roberts, Ian. 2011. Parametric hierarchies: Some observations. Talk delivered at the Workshop on Formal Variation and Syntactic Theory, Universidad Autonóma de Madrid.

Sapir, Edward. 1921. *Language: An introduction to the study of speech*. Harcourt, Brace and company.

Wexler, Kenneth & Peter Culicover. 1980. *Formal principles of language acquisition.* MIT Press.

Yang, Charles D. 2002. Grammar competition and language change. In David W. Lightfoot (ed.), *Syntactic effects of morphological change*, 367–380. Oxford University Press.