Arapaho, the English of Algonquian: V-C movement and its effects on agreement paradigms*

Ksenia Bogomolets, Paula Fenger & Adrian Stegovec

University of Connecticut

1. Introduction

In this paper, we draw parallels between two syntactic phenomena from two unrelated language families: V-C movement in Germanic (specifically *'Verb Second'*) and the Independent/Conjunct alternation in Algonquian. Complex verbal morphology of the highly polysynthetic Algonquian languages has received wide attention both in descriptive and theoretical literature. We will focus here on one specific morpho-syntactic property of the Algonquian verb attested in most languages in the family: the same verb can surface with either of the two agreement paradigms in (1) (simplified) depending on the type of clause:[1]

(1) a. SIMPLE agreement (traditionally *Conjunct Order*):
stem – TH – $\boxed{\text{AGR}_x}$

b. COMPLEX agreement (traditionally *Independent Order*):
$\boxed{\text{AGR}_y}$ – **stem** – TH – $\boxed{\text{AGR}_x}$

The two paradigms differ in 'richness' of agreement morphology and in the phonological shape of the agreement affixes. Most importantly, depending on the syntactic environment, a verb can surface with either all agreement affixes following the stem (SIMPLE), or with agreement markers both preceding and following the verb stem (COMPLEX). The exact syntactic environments in which the SIMPLE and COMPLEX paradigms occur differ across individual languages in the family, but there seems to also be a common core of contexts.

*We would like to thank our audience at NELS 46, as well as Jonathan Bobaljik, Željko Bošković, Andrea Calabrese, Stefan Kaufmann, Renato Lacerda, Caitlin Meyer, Tammy Stark, Philipp Weiser, and especially Ian Roberts, for valuable comments, feedback and discussion. All remaining errors are our own.

[1]Abbreviations used in the paper: 'X>Y' = portmanteau marker for X acting on Y; 'X.Y' = fused marker for features X and Y; '1, 2, 3' = 1st, 2nd, 3rd person; 'NON.1' = non-1st person; 'AGR' = agreement; 'ASP' = aspect; 'COMP' = complementizer; 'F' = feminine; 'FUT' = future; 'IC' = initial change; 'INV' = 'inverse'; 'MOD' = modal; 'NEG' = negation; 'PART' = participle; 'PL' = plural; 'PRET' = preterite; 'Q' = interrogative; 'SG' = singular; 'SUBJ' = subjunctive; 'T' = tense; 'TH' = theme marker; 'WH' = wh-word.

There is, however, an obvious outlier to this generalization: *Arapaho*. Compared to the rest of the Algonquian family, the environments in which the SIMPLE and COMPLEX agreement paradigms occur in Arapaho seem to be reversed. While **SIMPLE agreement** occurs with "marked" types of clauses in the *basic Algonquian pattern*, in *Arapaho* this is the unmarked paradigm; conversely, while **COMPLEX agreement** is the unmarked paradigm in the *basic Algonquian pattern*, in *Arapaho* it occurs with "marked" types of clauses.

We argue that the distribution of Verb Second (V2) in Germanic and the SIMPLE and COMPLEX alternation in Algonquian stem from the same requirement of the verb to move to C only in some syntactic environments. Crucially, we show that the outliers within both language families (i.e. English and Arapaho) are exceptions to the general patterns in the same way, and suggest that the 'core' Algonquian patterns as well as the seemingly exceptional Arapaho pattern can be naturally captured by extending Richards's (2004) analysis of the SIMPLE and COMPLEX alternation in Wampanoag. Our proposal is that across Algonquian the COMPLEX pattern consistently surfaces on the verb whenever it undergoes movement to C, and that SIMPLE agreement surfaces whenever V-C movement does not take place. This analysis is backed up by the striking parallelism between the attested V2 patterns in Germanic and the attested COMPLEX/SIMPLE patterns. This link between unrelated and superficially completely different groups of languages also suggests that cross-linguistic variation in V-C movement is not arbitrary. The ultimate goal of this study is thus to pave the way towards a deeper understanding of head-movement in the clausal domain.

This paper is structured as follows. In Section **2**, we present the distribution of the two agreement paradigms across Algonquian languages as well as the outstanding pattern found in Arapaho. In Section **3**, we compare the distribution of the two agreement paradigms in Algonquian to the distribution of V2 in Germanic. In Section **4**, we propose a unified analysis for the distribution of the two paradigms across Algonquian, and we show how an extension of our analysis can be applied to the seemingly exceptional Arapaho pattern.

2. A closer look at variation in Algonquian

Let us take a closer look at the syntactic contexts in which the verbal complex surfaces with COMPLEX or SIMPLE agreement in a number of Algonquian languages. The two paradigms are always in complementary distribution, where the general pattern is the following: SIMPLE agreement is normally restricted to a smaller set of contexts, corresponding to different types of clauses, whereas COMPLEX agreement is the default paradigm (Goddard 1974, Campana 1996, Brittain 2001, Cook 2008). First, we focus on (micro-)variation within the 'standard' pattern of the SIMPLE and COMPLEX agreement alternation, exemplifying it by comparing the pattern of Wampanoag, also known as Massachusett (Eastern Algonquian) Richards 2004) and the languages of the Cree-Montagnais-Naskapi complex (Central Algonquian) (Dalhstrom 1991, Brittain 2001). We then proceed to contrast these 'standard' patterns to the special case of Arapaho (Plains Algonquian) (Cowell & Moss Sr. 2008).

2.1 The 'standard' Algonquian pattern

The first language we look at is Wampanoag. The distribution of the two agreement paradigms in this language is summarized in (2). We can see from the schema in (2), that SIMPLE agreement in Wampanoag is restricted to a subset of types of embedded clauses.

(2) *Wampanoag verbal agreement:*

a. AGR ⇔ SIMPLE / { relative clauses; adjunct *when* and *if* clauses; embedded wh-questions }

b. AGR ⇔ COMPLEX / <default>

On the surface, the two paradigms are mainly identifiable via the presence or absence of the agreement proclitic and the peripheral agreement suffix. This is illustrated in (3), with the contrast between a basic matrix clause (3a) and an embedded adjunct clause (3b).[2] Whereas with the former agreement is marked by a proclitic (**ku-**), a central suffix (**-uwô**), and a peripheral suffix (**-eek**), the latter only has a central suffix (**-âk**).

(3) a. **ku**- nâw -uk -**uwô** -pan -**eek**
2- see -INV -NON1PL -PRET -PL
'They saw you$_{pl}$'

b. … nâw -uquy -**âk** -up
see -INV -2PL -PRET
'… (if/when/…) they saw you$_{pl}$'
(Wampanoag; Richards 2004)

Note also that the central suffixes in the COMPLEX (3a) and SIMPLE paradigms (3b) have different exponents (and seemingly cross-reference different arguments; but see footnote

[2] Three side notes about Algonquian agreement systems are in order. First, the identification of arguments in transitive clauses in Algonquian is governed by the so-called "Gender and Person hierarchy" of the configuration: 2 > 1 > 3 > Obviative > Inanimate. Thus, in a clause, the verb will always be marked for the agreement with the argument which is the highest in the hierarchy. Second, Algonquian languages employ special markers to signal the argument roles since the clitic, and two agreement suffixes in (3a) would have the same form for *'You saw them'* and *'They saw you'* due to the Gender and Person hierarchy (second person will outrank third person). The argument roles are marked by the inverse marker (INV) when the argument roles contradict the hierarchy. This marker is also traditionally known as theme sign. See for competing analyses on these topics (Béjar & Rezac 2009, Oxford 2014, a.o). Finally, this study is not concerned with how the φ-features are acquired, but see for competing analyses Brittain (2001), Béjar & Rezac (2009), Oxford (2014, 2015).

2), despite the two clauses having the same two arguments in terms of φ-features. This type of allomorphic variation is another hallmark of the COMPLEX/SIMPLE alternation. We will, however, focus in this paper almost exclusively on the variation in the number of agreement affixes and leave the question of varying agreement exponents for future work.

Let us now compare the distribution of the two agreement paradigms we saw for Wampanoag in (2) to the one attested in the languages of the Cree-Montagnais-Naskapi language complex (henceforth CMN) (Brittain 2001). In comparison to Wampanoag, the SIMPLE agreement paradigm is employed in a wider range of contexts in CMN. Crucially, it is required with all embedded clauses, not merely a subset of embedded clauses. Furthermore, it is also required with focus constructions, as well as negative clauses and wh-clauses regardless of their matrix/embedded status.

A second difference between Wampanoag and CMN concerns the surface realization of SIMPLE and COMPLEX agreement: there is no clear instance of a peripheral agreement suffix in CMN, thus there is only one suffixal marker for agreement. Otherwise, the split between the two paradigms parallels the one in Wampanoag.

In short, the surface difference between COMPLEX and SIMPLE agreement corresponds primarily to the presence and absence of the agreement proclitic and to the phonological form of the agreement suffixes. With respect to their distribution, the SIMPLE paradigm is the one tied to specific contexts, with the COMPLEX paradigm being the default case, although there are minor differences in terms of the exact contexts to which the paradigms are tied in Wampanoag and CMN. The distribution of the two paradigms in Wampanoag and CMN presented here also suggests that the choice of the agreement paradigm shows (at least some) sensitivity to the matrix/embedded clause distinction. However, we will see in what follows that in the case of Arapaho the contexts in which the SIMPLE and COMPLEX paradigms are required seem to be radically different. We will show that the SIMPLE paradigm is the default one, and that the distribution of the two paradigms is, in fact, not sensitive to the matrix/embedded split in Arapaho.

2.2 Arapaho

In many respects, Arapaho is an outlier within the Algonquian language family (Cowell & Moss Sr. 2008, Goddard 2015). The distribution of the two agreement paradigms in question is radically different in Arapaho, as compared to the languages discussed in the previous section:[3] COMPLEX agreement is restricted to a small set of contexts while the SIMPLE agreement is required in all other cases. Their distribution is summarized in (4).

(4) *Arapaho verbal agreement:*

a. AGR $\Leftrightarrow$ SIMPLE / <default>

b. AGR $\Leftrightarrow$ COMPLEX / $\left\{ \begin{array}{c} \text{negative clauses;} \\ \text{interrogative clauses;} \\ \text{modal clauses} \end{array} \right\}$

[3]The traditional terminology used to describe the SIMPLE and COMPLEX agreement paradigms in Arapaho is also different, namely: *Affirmative* and *Non-Affirmative order* (Cowell & Moss Sr. 2008).

This is exactly the reverse from what we saw for Wampanoag and CMN. In the majority of Algonquian languages, COMPLEX paradigm is used as the default, while in Arapaho the use of the COMPLEX agreement is restricted to a small set of syntactic environments.

Crucially, there is no difference in the realization of COMPLEX and SIMPLE agreement itself. This can be seen for Arapaho with the contrast between (5a), a basic declarative clause with SIMPLE agreement, and (5b), a negative clause with COMPLEX agreement. Two patterns in Arapaho differ in terms of the presence/absence of the agreement proclitic (**hei-**), which only surfaces with the COMPLEX agreement. This is illustrated in (5b).

(5) a. n<on>óóhob -**éinóni**
<IC>.see -3>2
'They see you$_{sg}$.'

b. **héí**- hoow- noohob -**éiʔí**
2- NEG- see -3PL>2SG
'They don't see you$_{sg}$.'
(Arapaho; Cowell & Moss Sr. 2008)

The distribution of the two paradigms in Arapaho differs from the 'standard' pattern in another key way. Recall that both the Wampanoag and CMN COMPLEX/SIMPLE patterns track the matrix/embedded split to some degree: in Wampanoag, SIMPLE agreement is found exclusively in a subset of embedded clauses, while in CMN all embedded clauses require SIMPLE agreement. In contrast, both COMPLEX and SIMPLE agreement occur in both matrix and embedded clauses in Arapaho, i.e. there is no asymmetry between the two paradigms corresponding to matrix vs. embedded environments.[4]

So far, we have established the 'standard' pattern of the COMPLEX/SIMPLE alternation in Algonquian (exemplified by Wampanoag and CMN), and we have compared it to the seemingly exceptional variant of the alternation in Arapaho. Table (6) below summarizes the variation (shaded cells mark the default paradigm).

(6) *The distribution of* SIMPLE *and* COMPLEX *agreement paradigms:*

	Wampanoag	Cree-Mont-Naskapi	Arapaho
COMPLEX	<default>	<default>	negative clauses; interrogative clauses; modal clauses
SIMPLE	relative clauses; adjunct *when/if* clauses; embedded wh-questions	embedded clauses; *wh*-clauses; negative clauses; focus constructions	<default>

[4]A part of the COMPLEX/SIMPLE paradigm in Arapaho which might be interpreted as dependent on the matrix-embedded contrast is negation. Arapaho has two types of negation, *hoowu* and *cii*. Even though on the surface the choice between the two might seem to correspond to the matrix-embedded contrast, this is only apparent. Bogomolets (to appear) shows that both forms of negation can be used in matrix and embedded contexts, and whenever the C-head is occupied with a C-type element, *cii* negation must surface.

Although we observe that there is a variation within the 'standard' pattern with respect to the particular contexts where the two agreement paradigms are required, the COMPLEX agreement is usually the default case. More specifically, the use of the COMPLEX pattern is always restricted in embedded contexts. In contrast, the Arapaho pattern appears to be reversed: SIMPLE agreement is the default case, and the distribution of the two paradigms shows no real sensitivity to the matrix/embedded split. In the next section, we will argue that, despite this apparent hurdle, a unified analysis of the COMPLEX/SIMPLE alternation for both patterns can be developed. Following up on Richards (2004), we draw a comparison between the Algonquian agreement alternation and the distribution of V-C movement in Germanic. In particular, we argue that while the 'standard' Algonquian pattern is analogous to canonical V2, the Arapaho pattern is in fact an analogue of Residual V2 patterns.

3. Agreement paradigms and V-to-C movement

In this section, we relate the phenomenon of the COMPLEX/SIMPLE agreement alternation in Algonquian to the V2/non-V2 clause contrast in Germanic. We build here on Richards's (2004) intuition that COMPLEX agreement in the 'standard' Algonquian pattern indicates the presence of V-C movement, given that the presence of COMPLEX agreement in specific types of clauses almost exactly mirrors the distribution of V2 clauses in some languages.

A connection between the realization of agreement and the syntactic position of the verb is not unknown outside of Algonquian. In fact, it can be illustrated with (Standard) Dutch, where the form of the suffix on the finite verb depends on the syntactic position of a verb (Ackema & Neeleman 2013, Zwart 1997),[5] in particular its position in relation to the subject. In matrix clauses, the verb is in the second position, due to Dutch being a V2 language, as shown in (7a) and (7b). Interestingly, the marker is different on the verb in V2 clauses if the subject follows the verb. However, if the verb does not move to C, as in an embedded clause like (7c), agreement can never be affected in the same way.

(7) a. Met je zusje loop je naar de snoepwinkel. [V > S = ∅]
with your sister walk-∅ you to the candy.shop
'You walk to the candy shop with your sister.'

b. Je loop**-t** met je zusje naar de snoepwinkel. [S > V = AGR]
You walk-AGR with your sister to the candy.shop
'You walk to the candy shop with your sister.'

c. …dat je met je zusje naar de snoepwinkel loop**-t**. [emb. = AGR]
…that you with your sister to the candy.shop walk-AGR
… 'That you walk with your sister to the candy shop.'

Thus, we can see in (7) that the surface form of agreement morphology can in fact be conditioned by the position of the finite verb in the syntax. Despite there being additional

[5] See Bogmolets et. al. (in prep) for a more detailed discussion of allomorphy in Algonquian agreement affixes and its relation to the alternating agreement suffixes in Dutch and their relation to V-C movement.

factors in Dutch constraining the realization of AGR, such examples are illustrative of the logic behind the analysis of COMPLEX/SIMPLE which we propose in this paper.

Taking this interaction of agreement with V-C movement as a starting point, let us consider now the distribution of V2. Within Germanic, there is ample (micro-)variation in terms of availability of V2 (see Holmberg 2015, for an overview and discussion — also beyond Germanic). The canonical case of V2, in German, is sensitive (among other things) to the matrix/embedded clause contrast. This is shown in (8), where we can see that V2 is blocked in an embedded clause (8a), but present in a matrix clause (8b).

(8) a. Ich bezweifele [dass Hans gestern zu Hause geblieben **ist**.] [emb.: *V2]
I doubt that Hans yesterday at home stayed is
'I doubt that Hans stayed at home yesterday.'

b. Gestern **ist** Hans zu Hause geblieben. [matx.: V2]
yesterday is Hans at home stayed
'Hans stayed at home yesterday.' (Richards 2004, 366)

Not all Germanic languages disallow V2 in basic embedded clauses.This is for example the case in Icelandic. Thus, in some embedded clauses, Icelandic allows V2, where German does not (compare the sentence pair in (8) with the corresponding Icelandic one in (9a)), whereas in other embedded clauses, V2 is disallowed in Icelandic (9b).

(9) a. Jón efast um að [á morgun **fari** María snemma á fætur.] [emb.: V2]
John doubts that tomorrow gets Mary early up
'John doubts that Mary will get up early tomorrow.' (Richards 2004, 366)

b. Jón veit ekki [Hvaða mynd ***{hafi}*** María {**hafi**} horft á í gær.]
John knows not which picture {had} Mary {had} watched on in yesterday
'John doesn't know what/which film Mary watched yesterday.'
(p.c. Gísli Rúnar Harðarson)

In short, while in German, V2 is generally disallowed in embedded clauses, in Icelandic, it is only disallowed in a specific subset of embedded clauses. Recall that this was exactly the difference between CMN and Wampanoag, albeit concerning the distribution of COMPLEX agreement. This parallelism between the 'standard' Algonquian pattern and V2 distribution in Germanic was a factor in Richards's (2004) proposal that the COMPLEX/SIMPLE alternation is in fact correlated to the presence of V2-style V-C movement, and must therefore be subject to the same parameters of variation. Furthermore, just like V2, COMPLEX agreement is found in more types of matrix clauses than embedded clauses within a language. This all points to a deeper connection between the two phenomena.

Note however that Arapaho is still the outlier under this view, as the distribution of COMPLEX agreement does not align with canonical V2 contexts. We will argue, nevertheless, that Richards' idea can in fact be extended to the exceptional Arapaho pattern, and the key to the solution lies in the exceptional pattern with respect to V2 in Germanic — English. Consider Table (10), showing the distribution of V2 across Icelandic and German,

contrasting it with the lack of V2 in English, which instead only has a few restricted instances of Aux-C inversion. The contexts where English requires Aux-C inversion match the contexts in which Arapaho requires COMPLEX agreement (cf. Table (6) above).

(10) *The distribution of V2 (Aux-C for English):*

	Icelandic	German	English
V2	<default>	<default>	negative clauses modal clauses interrogative clauses
No V2	relative clauses; adjunct *when/if* clauses; embedded wh-questions	embedded clauses adjunct clauses negative clauses	<default>

In order to understand why Richards' analysis, but not other existing analyses of COMPLEX/SIMPLE agreement (Brittain 2001, Branigan 2012), can be amended to also capture the Arapaho pattern, in the next section, we consider his account in more detail.

3.1 SIMPLE vs. COMPLEX agreement in Algonquian and V-C movement

Richards (2004) focuses primarily on Wampanoag, which is the sole COMPLEX/SIMPLE pattern he derives. His basic idea is that COMPLEX agreement surfaces with V-C movement, and that SIMPLE agreement surfaces when V-C movement is blocked and the verb only moves as high as T. Thus, like with V2, V-C movement takes place in Wampanoag except when it is blocked, i.e. except in a specific subset of embedded clauses (*relative clauses*, *adjunct when/if clauses*, and *embedded wh-questions*). Under his analysis, Wampanoag has three loci of agreement (9), located in the following positions in the clausal spine: AGR_1 (hosted by Pol^0), AGR_2 (hosted by C^0), and the pro-clitic CL (located in SpecCP).[6]

(11) $[_{CP}$ **CL** $[_{C'}$ C-**AGR**$_2$ $[_{TP}$ T $[_{PolP}$ Pol-**AGR**$_1$ $[_{vP}$ *v* V]]]]

Crucially for Richards, an AGR morpheme can only be spelled-out at PF if the verb either moves to the head hosting it or through it in the syntax, which is a stipulation he borrows from Phillips (1998). The basic idea behind this view is illustrated in (12): AGR on the verb can be spelled-out either if V moves to the head containing AGR (12a) or if V moves through a head containing AGR by virtue of successive-cyclic head-movement (12b).

(12) a. [AGR . . . [. . . V . . .]]

b. [X . . . [AGR . . . [. . . V . . .]]]

[6] We do not commit to this specific placement of AGR morphology. What is crucial is that both the proclitic and the peripheral AGR suffix (in the languages that have it) are associated with C (see Oxford 2014, 2015, for an alternative position of the central AGR suffix — crucially still below what we label here as T)

Richards further assumes a condition on the spell-out of the proclitic in SpecCP, which may only surface at PF when adjacent to a verb. This is met in (11), only if the verb is in C.

Combining both of these assumptions regarding the spell-out of agreement, the COMPLEX/SIMPLE alternation follows straightforwardly from the presence/absence of V-C movement. In the case of COMPLEX agreement, with V-C movement the verb picks up AGR_1 and AGR_2, and becomes adjacent to CL. When V-C movement is blocked, V cannot 'pick-up' AGR_2 (on C) or host CL (in SpecCP), and therefore they are not spelled-out, but AGR_1 (on Pol) is — resulting in the verb surfacing with SIMPLE agreement.

The derivation of the Wampanoag COMPLEX agreement pattern under this analysis is illustrated below. The sentence in (13a) is derived as shown in (13b), where angled brackets indicate lower copies of the moved heads. Observe that both conditions for agreement spell-out are met for all the agreement loci present in the syntactic structure in (13b); they are either picked up by the verb by moving through or to AGR-hosting heads (Pol and C), or in the case of the proclitic in SpecCP it ends up being adjacent to the verbal complex in C.

(13) a. **ku**- nâw -uk -**uwô** -pan -**eek** COMPLEX
2- see -INV -NON1PL -PRET -PL
'They saw you$_{pl}$' (Wampanoag; cf. (3a))

b. [CL= [C -AGR_2 [T [Pol -AGR_1 [*v* V]]]]
ku- [[[[nâw]-uk]-**uwô**]-pan] **-eek** ⟨pan⟩ ⟨uwô⟩ ⟨uk⟩ ⟨nâw⟩

In contrast to the derivation in (13b), the conditions for agreement spell-out are not met for all agreement loci in the derivation of SIMPLE agreement. In the case of (14a), only the central agreement suffix is spelled-out due to the verb only moving as high as T. This is shown in (14b). Because V does not move to C, AGR_2 is not 'picked up' by V and this cannot be expressed at PF. In the case of CL, it is not realized at PF because it does not end up being adjacent to the verbal complex, as the verb is not in C by the end of the derivation.

(14) a. ... nâw -uquy -**âk** -up SIMPLE
see -INV -2.PL -PRET
'... (if/when/...) they saw you$_{pl}$' (Wampanoag; cf. (3b))

b. [CL=* [C *-AGR_2 [T [Pol -AGR_1 [*v* V]]]]
∅ ∅ [[[nâw]-uquy]-**âk**]-up ⟨âk⟩ ⟨uquy⟩ ⟨nâw⟩

Although these derivations are meant to capture the Wampanoag data, they can be straightforwardly transplanted to other 'standard' patterns of COMPLEX/SIMPLE alternation within Algonquian. The difference between them then lies only in the specific contexts where there is V-C movement, and in whether there is an AGR in both Pol and C, or just in Pol. Thus, by changing only these parameters, the CMN pattern can just as easily be captured.

A problem, however, arises with Arapaho. Richards ties COMPLEX agreement specifically to V2-style V-C movement, thus predicting that (just as with V2) SIMPLE agreement will occur only when V-C movement is blocked/unavailable; COMPLEX agreement will

then always be the default paradigm. Recall now that in Arapaho it is SIMPLE agreement that is the default, and COMPLEX only occurs in a restricted set of contexts. In its original form Richards' analysis cannot be extended to Arapaho. However, we will show in the next section that his analysis can be modified to also capture the Arapaho pattern, whereas other competing syntactic accounts cannot.

4. SIMPLE vs. COMPLEX agreement in Arapaho

In this section, we will argue that all kinds of V-C movement matter, not only the 'strict V2'-style movement: we will show that all the patterns of distribution of the two agreement paradigms in Algonquian can be accounted for with the same syntactic requirement for the verb to move to C, but the environments where this requirement applies, differ from language to language. If we turn back to the Germanic language family, we can observe another pattern: English Aux-C inversion. This type of movement is limited to some auxiliaries and "marked" contexts like Conditional Inversion, Interrogative Inversion, and Negative Inversion (Biberauer & Roberts 2016). An example of Conditional Inversion is given below, where *'had'* can undergo it, whereas other auxiliaries, such as 'did' cannot.

(15) a. **Had** I been rich, everything would have been OK. (CI)
b. ***Did** I do that, everything would be OK. (*CI)

Thus, modern English only has Aux-C movement in very restricted environments and only with specific auxiliaries. Earlier stages of English were less restrictive, and inversion was possible with lexical verbs in Old/Middle English, as illustrated in (16).

(16) **Dewite** þ ungesewenlice ut þonne fylð adune þ gesewenlice
depart.SUBJ the invisible(soul) out then falls down the visible(body)
'If the invisible soul departs, then the visible body falls down.'
(*AEHom I, 10: 123-4*)

There is an independent reason for the Modern English inversion to be restricted only to auxiliaries, namely, the disappearance of V-T movement (see Biberauer & Roberts 2016).[7] As there are no auxiliaries in Arapaho, we will assume, following Richards (2004), that the verb always moves at least as high as T in Algonquian.

We argue that Arapaho, just like English only has V-C movement in very few restricted environments, i.e. *Residual V2* (Rizzi 1990). This contrasts with the majority of Algonquian/Germanic, which have generalized V-C, with some variation in terms of how 'general' V-C is. In 4.1 we propose a derivation of Arapaho by extending Richards' analysis and assume that all V-C movement leads to COMPLEX agreement.

[7] In fact, French patterns even more closely with Arapaho in terms of its Residual V2 pattern, which is possible with lexical verbs. We, however, discuss (Old/Middle) English instead in order to maintain the parallelism between variation within Algonquian and variation within Germanic.

4.1 Deriving the COMPLEX/SIMPLE alternation in Arapaho

Arapaho behaves parallel to English by not having general V-C; it has V-C in certain marked environments (Residual V2), which then yields COMPLEX agreement. This keeps our analysis uniform with the line of analysis for other Algonquian languages presented earlier (in the context of Richards 2004), but we propose that in Arapaho, V moves all the way to C only in a subset of irrealis contexts discussed in the previous section. This is closely parallel to the contexts found in English V-C movement. Crucially, V-C movement is not tied to the matrix/embedded contrast. Recall that in the baseline Algonquian and Germanic languages V-C movement is usually allowed in a larger set of constructions in matrix clauses than in embedded clauses. However, in both Arapaho and English this is not the case: whenever one of the appropriate contexts occurs, there is V-C movement.

Let us now move to the details of the derivation. In contrast with Wampanoag, Arapaho has only two loci of agreement morphology: the pre-verbal clitic CL located in SpecCP and the post-verbal AGR hosted by Pol^0. As before, when the verbal complex is present in C, the verbal pro-clitic CL can surface at PF, as it is adjacent to the verbal complex, which provides it with a host. This derivation is illustrated in (17b).[8]

(17) a. **héí**- hoow- noohob -**éiʔí** COMPLEX
2- NEG- see -3PL>2SG
'They don't see you$_{sg}$.' (Arapaho; cf. (5b))

b. [CL= [C [T [Pol -AGR [*v* V]]]]
héi- [hoow-[noohob]-**éiʔí**] ⟨hoow⟩ ⟨éiʔí⟩ ⟨noohob⟩

With all other clause types, V does not move as high as C, so the verbal complex is not adjacent to CL in V's final landing site and thus CL cannot surface at PF (see Bogomolets et. al. (in prep.) where this alternation in markers is treated as a case of allomorphy). [9]

(18) a. n<on>óóhob -**éinóni** SIMPLE
<IC>.see -3>2
'They see you$_{sg}$.' (Arapaho; cf. (5a))

b. [CL=* [C [T [Pol -AGR [*v* V]]]]
∅ <IC> [[noohob]-**éinóni**] ⟨éinóni⟩ ⟨noohob⟩

[8] A similar condition, at the abstract level, holds in (Canadian) French for wh-words and complementizers (Ž. Bošković p.c.): The COMP (*'que'*) is overt when a wh-word is in SpecCP (*'qui que'*), but not with wh-in-situ. The 'Spec-head' configuration is thus crucial here for PF realization, as it is for the CL in Algonquian.

[9] At the moment, we set aside the morpheme order, which is another aspect in which Arapaho is exceptional within Algonquian. While the morpheme order in most Algonquian languages respects the Mirror Principle, (cf. Wampanoag examples above), in Arapaho, it does not. This can be accounted for if Arapaho, but not all other Algonquian languages, has the *Multiple Head-Movement* (Branigan 2012) which results in order preserving complex heads. Another possibility that would yield the same results in terms of morpheme order is if the TAM prefixes are actually left-adjoined clitics in Arapaho (along the lines of the analysis of Bulgarian in Bošković 2002). We leave it for future work to distinguish between the two.

The analysis proposed in this paper is not a commitment to any particular analysis of V-C movement or V2; rather, we show that the distribution of V-C movement differs in Algonquian within virtually the same parameters as V2 in Germanic and more broadly - in Indo-European. Thus, the distribution of Algonquian V-C movement patterns with the distribution of V2 that we find cross-linguistically. Firstly, there is the 'German style' where V2 is almost exclusively restricted to matrix clauses. This patterns with languages such as CMN where COMPLEX agreement is only found in matrix clauses. Second, there is the 'Icelandic-style' where we find V2 in matrix clauses and in a subset of embedded clauses. This patterns with Wampanoag, since COMPLEX agreement is found in exactly the same environments. Finally, there is the so called Residual V2 pattern attested in English. With this pattern Aux/V-C movement only occurs in a restricted set of environments, but not across the board. This is also the case in Arapaho where COMPLEX agreement only surfaces in exactly those environments where we find Aux-C movement in English.

4.2 Alternative analyses of the split

As noted, Richards' analysis of COMPLEX agreement as a marker of V2-style V-C movement cannot be directly extended to Arapaho, due to its COMPLEX paradigm not occurring in contexts normally associated with V2. However, we have shown that it is possible to account for the Arapaho pattern in terms of Residual V2. Let us now briefly address alternatives to the COMPLEX/SIMPLE alternation that tie it to verb movement more generally.

Taking the CMN languages as the main case-study, Brittain (2001) argues that the conjunct vs. independent distinction (corresponding to what we call SIMPLE vs. COMPLEX) is an Algonquian-specific clause-type distinction marked by the presence of a [±conjunct] feature on C. In this account, the verb moves to C due to a [+conjunct] feature on C resulting in SIMPLE morphology. This, in fact, is the reverse of Richards' proposal. The [±conjunct] distinction is arbitrary in this account, and it fails to capture the striking parallels between Algonquian COMPLEX/SIMPLE and Germanic V2.

Yet another analysis is proposed in Branigan (2012). This account, similarly to Brittain (2001), links the V-C movement to "less" agreement morphology, and it relates it to embedded clauses (and presumably other conjunct/SIMPLE clauses) having less structure. This analysis, again, cannot be extended to Arapaho. As shown by Bogomolets (to appear), on the basis of a morpho-phonological process pervasive in Algonquian traditionally known as Initial Change (IC), Arapaho clauses always seem to project a full CP (in cartographic terms — her structure would include at least ForceP as the clause-type layer). Across Algonquian, IC has been analyzed as a complementizer (Costa 1996, and references therein). In Arapaho, as proposed by Bogomolets, IC should be analyzed as an infix originating in C, marking [+realis]. This infix is incompatible with any other C-related elements: question particles, wh-questions, overt complementizers, and a number of others. This complementarity in distribution is taken to indicate the structural competition between IC and these elements in C. Importantly, this competition is attested in matrix clauses as well, which suggests that a C is also projected in matrix clauses. Crucially, Arapaho IC is also in competition with COMPLEX agreement. This can be seen in the examples in (19), where the IC

infix surfaces in the neutral affirmative matrix clause in (19a), whereas no IC surfaces in the corresponding interrogative clause in (19b):

(19)	a.	b**<e>**etéee-noo	[IC]	b.	koo=ne-betéee?	[no IC]
		<IC>.dance-1SG			Q=1SG-dance	
		'I am dancing.'			'Am I dancing?'	

In our analysis, their complementary distribution can be straightforwardly explained by assuming that IC is blocked when the verb moves to C and yields COMPLEX agreement.

We have argued that Richards' account of the COMPLEX/SIMPLE alternation avoids the problems outlined in this section and can be extended to Arapaho if we treat the COMPLEX agreement paradigm in Arapaho as corresponding to Residual V2.

5. Conclusion

In this study, we addressed two agreement paradigms alternating in Algonquian languages, and we proposed treating this alternation in terms of the availability of V-C movement in particular syntactic contexts. We focused on one of the Plains Algonquian languages — Arapaho, which appears to be exceptional in the family. We showed, however, that an analysis in terms of restrictions on V-C movement can be extended universally in Algonquian despite the fact that Arapaho appears to be exceptional on the surface. We propose that all V-C movement leads to COMPLEX agreement and lack of V-C movement leads to SIMPLE agreement. We compare the Algonquian patterns of V-C movement to the well-known phenomenon of V2 in Germanic. While in most Algonquian languages COMPLEX agreement (V-C movement) surfaces in environments corresponding to V2 in most Germanic languages, Arapaho is compared to English in this paper in that it only has V-C movement in a restricted number of marked contexts (Residual V2).

Importantly, we have shown that even in terms of internal variation within the two language families, the pattern is closely parallel, crucially including the "outliers", Arapaho and English. This strongly suggests that cross-linguistic variation in V-C movement is not arbitrary as it shows highly comparable patterns in completely unrelated languages.

References

Ackema, Peter, & Ad Neeleman. 2013. Person features and syncretism. *Natural Language & Linguistic Theory* 31:901–950.

Béjar, Susana, & Milan Rezac. 2009. Cyclic Agree. *Linguistic Inquiry* 40:35–73.

Biberauer, Theresa, & Ian Roberts. 2016. Parameter typology from a diachronic perspective: The case of Conditional Inversion. In *Theoretical approaches to linguistic variation*, ed. Ermenegildo Bidese, Federica Cognola, & Manuela Caterina Moroni, 259–292. Amsterdam: John Benjamins.

Bogomolets, Ksenia. to appear. All the things in C: Initial Change in Arapaho and simultaneous spell out of multiple features in the CP domain. In *Proceedings of CLS52*.

Bogomolets, Ksenia, Paula Fenger, & Adrian Stegovec. in preparation. Unifying V-C movement in Algonquian and Germanic: A view from morphology. Ms. UConn.

Bošković, Željko. 2002. Clitics as nonbranching elements and the linear correspondence axiom. *Linguistic Inquiry* 33:329–340.

Branigan, Phil. 2012. Macroparameter learnability. Manuscript, Memorial University.

Brittain, Julie. 2001. *The morphosyntax of the Algonquian conjunct verb*. New York: Garlan.

Campana, M. 1996. The conjunct order in Algonquian. *Canadian Journal of Linguistics* 41:201–234.

Cook, Claire. 2008. The syntax and semantics of clause-typing in Plains Cree. Doctoral dissertation, University of British Columbia.

Costa, D. J. 1996. Reconstructing Initial Change in Algonquian. *Anthropological Linguistics* 38:39–72.

Cowell, Andrew, & Alonzo Moss Sr. 2008. *The Arapaho language*. University Press of Colorado.

Dalhstrom, A. 1991. *Plains Cree morphosyntax*. New York: Garland.

Goddard, Ives. 1974. Remarks on the Alqonguian independent indicative. *International Journal of American Linguistics* 40:317–327.

Goddard, Ives. 2015. Arapaho historical morphology. *Antroplogical Linguistics* 57:345–411.

Holmberg, Anders. 2015. Verb Second. In *Syntax — Theory and Analysis*, ed. Tibor Kiss & Artemis Alexiadou, 342–383. Berlin: de Gruyter.

Oxford, Will. 2014. Microparameters of agreement. Doctoral dissertation, University of Toronto.

Oxford, Will. 2015. Variation in Multiple Agree: A syntactic connection between portmanteau agreement and inverse marking. Ms. University of Manitoba. `https://home.cc.umanitoba.ca/~oxfordwr/papers/Oxford_portmanteau-inverse.pdf`.

Phillips, C. 1998. Disagreement between adults and children. In *Theoretical issues on the morphology-syntax interface*, ed. A. Mendikoetxea & M. Uribe-Etxebarria, 359–394. San Sebastian: ASJU.

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

Rizzi, Luigi. 1990. Speculations on verb-second. In *Grammar in Progress: Essays in honour of Henk van Riemsdijk*, ed. Joan Mascaró & Marina Nespor, 375–386. Groningen: Foris.

Zwart, Jan Wouter. 1997. Dutch syntax: a minimalist approach. Doctoral dissertation, Groningen University.

Ksenia Bogomolets, Paula Fenger, Adrian Stegovec
ksenia.bogomolets@uconn.edu, paula.fenger@uconn.edu, adrian.stegovec@uconn.edu